

4.5 MW

Goldwind Smart Wind Turbine

Product Benefits

For more than two decades Goldwind has been innovating for a brighter energy tomorrow. The Goldwind 4.5 MW PMDD turbine is part of that innovative future. The 4.5 MW turbine is a direct evolution of Goldwind's portfolio of wind turbine generators that offer best-in-class energy production, smarter controls and industry-leading availability.

• Smart features

Through Smart Sensing, strategic sensors monitor key components, enabling predictive diagnostics and precision control. Based on Goldwind's big data analysis of tens of thousands of installed direct-drive turbines and more than 20 years of wind energy expertise, Goldwind had developed advanced optimized control algorithms for maximum energy capture.

• High reliability

The gearless drivetrain design, eliminates the possibility of gear failure during the operational life of the turbine. Goldwind's own toothed belt pitch drive system simplifies pitch system maintenance requirements.

• Highly adaptable

Grid adaptability: excellent zero, low and high voltage ride-through capability, and compliant with global standards. Maintenance adaptability: dual circuit design generator and converter enables partial operation when one circuit is compromised. Environment adaptability: flexible operation modes enable adaptation to extreme environmental conditions such as high and low temperature, noise constraints and challenging wind conditions.

*For more information, visit us at www.goldwindamericas.com/gw4s

Goldwind 4.5 MW Smart Wind Turbine

Technical specifications

Parameters	Unit	GW155/4500kW
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Operating parameters

Rated power	kW	4500
Wind turbine class	IEC	IIIC / IIIB
Cut-in wind speed	m/s	2.5
Rated wind speed	m/s	11.3
Cut-out wind speed	m/s	26
Design service life	Year	≥20
Operating temperature	°C	-30°C to +40°C (derating at 45°C)
Survival temperature	°C	-40°C to +50°C
Sound power	\	Optimized for maximum performance Sound-reduced operating modes available

* Cut-out speed can be extended based on project-specific wind data.

Rotor system

Rotor diameter	m	155
Swept area	m ²	18869

Generator

Type	\	Permanent magnet synchronous generator
Rated voltage	V	740

Converter

Type	\	Full Power Converter (IGBT) Modular System
Power factor regulation range	\	Capacitive 0.9 - inductive 0.9

Brake system

Aerodynamic brake system	\	Aerodynamic brake via feathering
Mechanical brake system	\	Hydraulic and mechanical brake (for maintenance)

Yaw system

Type/Design	\	Motor-driven/Four-stage planetary gear reducer
Yaw brake	\	Hydraulic brake

Control system and lightning protection

Type	\	PLC control system
Design standard	\	IEC standards and GL certification standards
Lightning protection strategy	\	Integrated lightning protection system for the turbine
Wind turbine ground resistance	Ω	≤4

Tower

Type	\	Steel tower
Hub height	\	110, project specific

