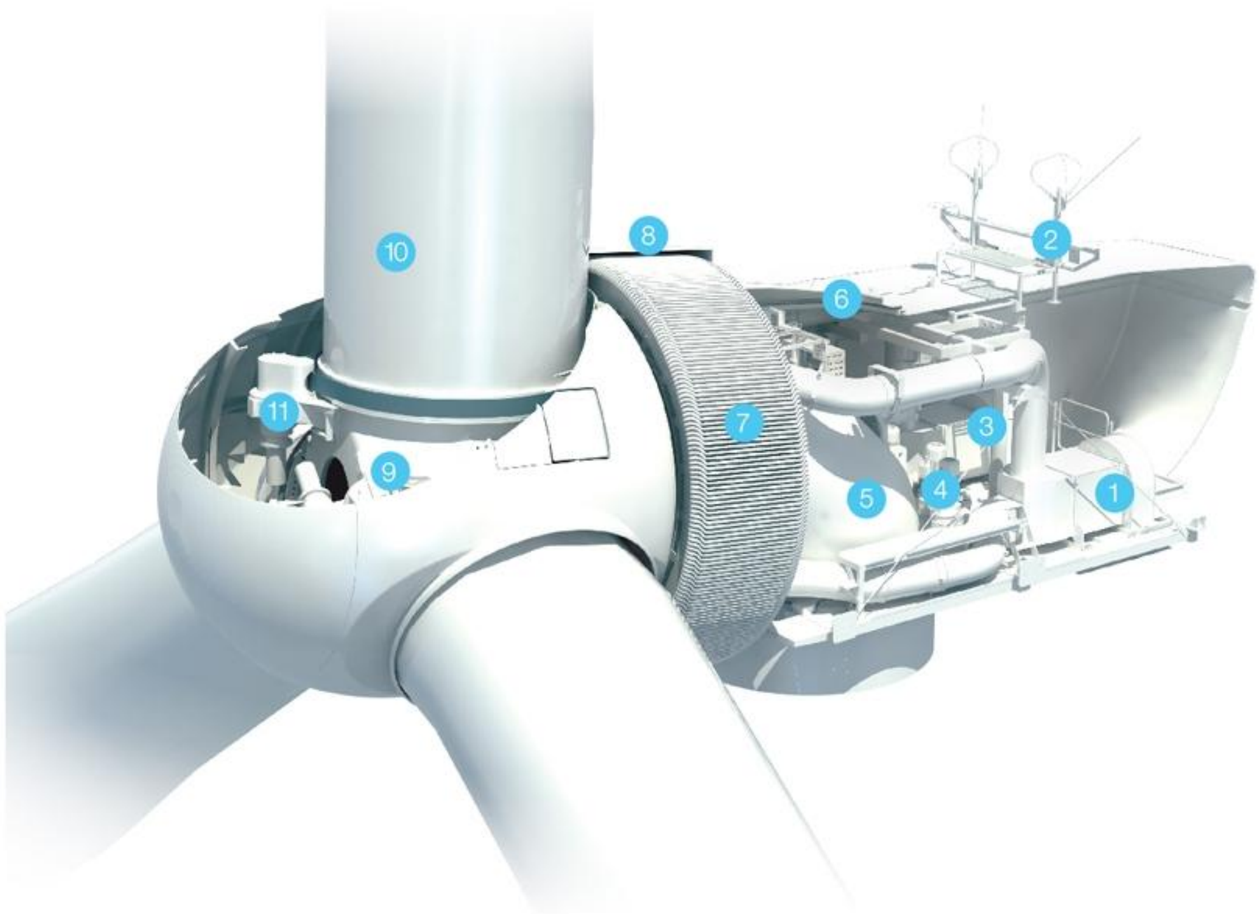
45 MW

PMDD WIND TURBINE

45 MW PMDD WIND TURBINE



1. Generator Cooling System
2. Wind Measurement Equipment
3. Hoist
4. Yaw System
5. Nacelle Base
6. Nacelle Enclosure
7. Generator Stator
8. Generator Rotor
9. Hub
10. Blade
11. Pitch System

GOLDWIND 4SMW PMDD WIND TURBINE KEY FEATURES

Platform Evolution

- 20+ years of operational experience from 10,000+ Permanent Magnet Direct Drive (PMDD) wind turbines
- Evolution of the successful GW2500 platform with enhanced architectural features

High Efficiency

- Permanent Magnet Synchronous Generator (PMSG) eliminates excitation losses
- The absence of gearbox eliminates losses from ancillary systems such as lubricant distribution and thermal management

Smart Features

- Smart Sensing: Strategic sensors monitor key components, enabling predictive diagnostics and precision control
- Smart Control: Goldwind's big data analysis of 10,000+ installed direct-drive turbines and more than 20 years of wind energy expertise, have resulted in the most advanced algorithms
- Smart O&M: Platform includes a QR code data management system which is customizable to customer requirements for efficient logistics

High Reliability

- The gearless drivetrain design eliminates the possibility of gear failure during the operational life of the turbine
- Maintenance-free design of the toothed belt pitch drive system simplifies pitch system maintenance requirements
- PMSG does not require high maintenance slip rings for conducting power

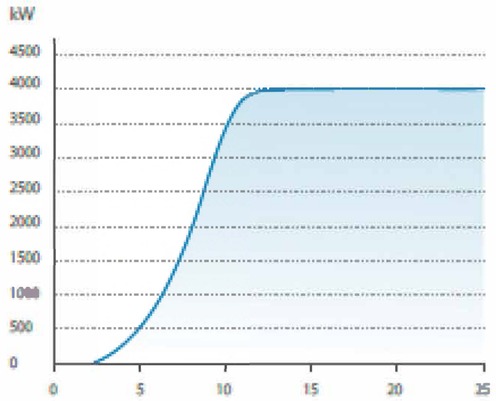
Highly Adaptable

- Grid Adaptability: Excellent zero, low and high voltage ride through capability, and compliant with associated global standards
- Maintenance Adaptability: Dual circuit design of 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
- Construction Adaptability: Individual blade assembly to conserve site space constraints

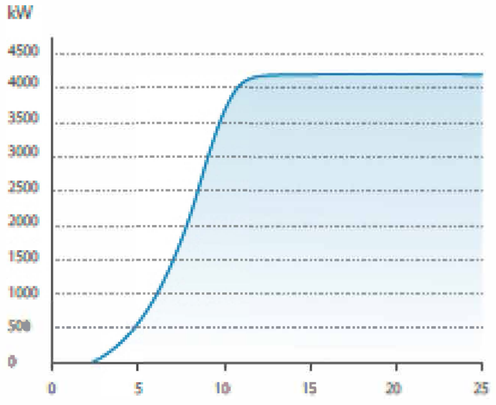
DYNAMIC POWER CURVE

Air Density:1.225kg/

GW 136/4000



GW 136/4200



TECHNICAL SPECIFICATIONS

GW 4S MW		
Item	**Unit**	**Configuration**
Platform		GW4S
Models		GW 136/ 4.0MW GW 136/ 4.2 MW
Operation Parameters		
Rated Power	kW	4000 and 4200
Wind Class		IEC IIA
Cut-in Wind Speed	m/s	2.5
Rated Wind Speed	m/s	11
Cut-out Wind Speed	m/s	25
Designed Operating Life	Years	≥20
Operating Temperature Range	℃	-20—40
Survival Temperature Range	℃	-30—50
Rotor		
Rotor Diameter	m	136
Swept Area	m^2	14711
Generator		
Type		Permanent Magnet Direct Drive Synchrono-us Generator
Converter		
Type	Full Power Converter (IGBT) Modular System	
Power Factor Regulation Range	1/4 Rated Power	Capactive 0.9 to Inductive 0.9
	2/4 Rated Power	Capactive 0.9 to Inductive 0.9
	3/4 Rated Power	Capactive 0.9 to Inductive 0.9
	Rated Power	Capactive 0.9 to Inductive 0.9
Rated Frequency Range	Hz	50/60Hz
Rated Output Power	KVA	4889
Rated Output Voltage	V	690 (Inverted Output Voltage)
Braking System		
Aerodynamic Brake System		Blade Pitch Triple-Redundant
Mechanical Brake System		Hydraulic Mechanical Brake System (for Maintenance)
Yaw System		
Type/Design		Motor Drive/ Four Planetary Stages for Speed Reduction
Control System and Lightning Protection		
Type		PLC Control System
Lightning Protection Design Standard		Complying with IEC 61400-24-2010, IEC 62305-2006, and in Conformance with GL Standards
Lightning Protection Strategy		Electrical lightning protection, tip lightning protection (in Conformance with GL Standards)
Wind Turbine Ground Resistance	Ω	≤4
Tower		
Type		Conical Steel Tower
Hub Height	m	100,110
Weight		
Rotor	t	95.3
Nacelle	t	40
Generator	t	95

INNOVATING FOR A BRIGHTER FUTURE

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