Wind Turbine

AGW 110 / 2.1

Direct-Drive Permanent Magnet Wind Turbine

Operating Data

Model	AGW 110 / 2.1
Rated power	2,100 kW
Wind class (IEC)	S (V_{ref} = 9.0 m/s / I_{ref} = 0.14 / V_{e50} = 52.5 m/s)

Rotor

Diameter	110 m
Power regulation	Independent pitch control per blade

Generator

Type	Synchronous
Excitation	Permanent magnets
Mechanical coupling	Direct (gearless)
Grid connection	Full-power converter
Cooling	Thermal fluid
Stator impregnation	VPI (Vacuum Pressure Impregnation)

Converter

Type	Back-to-back IGBT
Voltage/frequency	690 V / 60 Hz
Power factor	±0.95
Cooling	Thermal fluid

Nacelle

Yaw system	Active, driven by electric gearmotors
Main brake	Aerodynamic
Secondary brake	Electromechanical
Auxiliary brake	Electromechanical lock pin
Ventilation	Open (standard), for ordinary atmosphere Closed (optional), for maritime atmosphere

Transformer

Input/output voltage	690 V / 34.5 kV
Cooling	Air

Tower

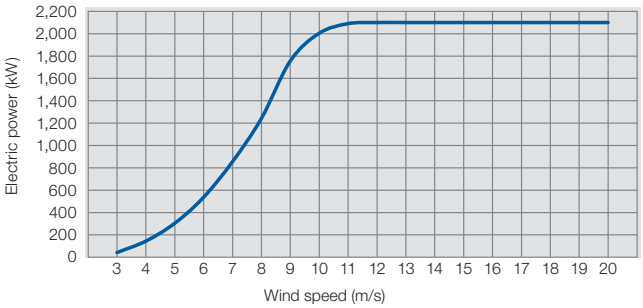
Hub height	80 m or 120 m
Construction	Steel (80 m) or concrete (120 m)
Nacelle access	Lift and service ladder

Additional Information

Service life	20 years
Operational temperature	-10 °C to 40 °C
Control system	PLC and MPU
Lightning protection	Built-in in blades, rotor and tower
Grid codes	Complies with ONS[1] requirements
Onboard crane	750 kg, inside the nacelle

Note: 1) ONS stands for the Brazilian National Power System Operator in Portuguese.

Power Curve



Air density, p_{air}=1.225 kg/m³

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