

Global Water & Energy Ltd.
Global Energy Technologies, Inc.
PO Box 90756, Long Beach, CA 90809-0756, USA
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2 MW Horizontal Axis Wind Turbine - Specifications

Wind Turbine Concept: Variable speed, individual blade adjustment



Performance

Rated Power: 2 MW
Cut-in Speed: 3 m/s
Rated Speed: 12 m/s
Top Speed: 25 m/s
Tip Speed: 70.5 m/s
Rotational Speed: 6-17.5 RPM
Rated Speed: 15.3 RPM
Survival Speed: 17.5 RPM
Swept Area: 6,079m²
Sound level: 103dB(A)

Measurements

Rotor Diameter: 88 meters
Number of Blades: 3
Hub Height: 80, 90, 100m (80 meters standard)
Blade Composition: Fiberglass/Epoxy
Lightning Protection: Included in blade design

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Drive Train

Main Bearing: One row double-tapered roller bearings
Gearbox: 3 stage

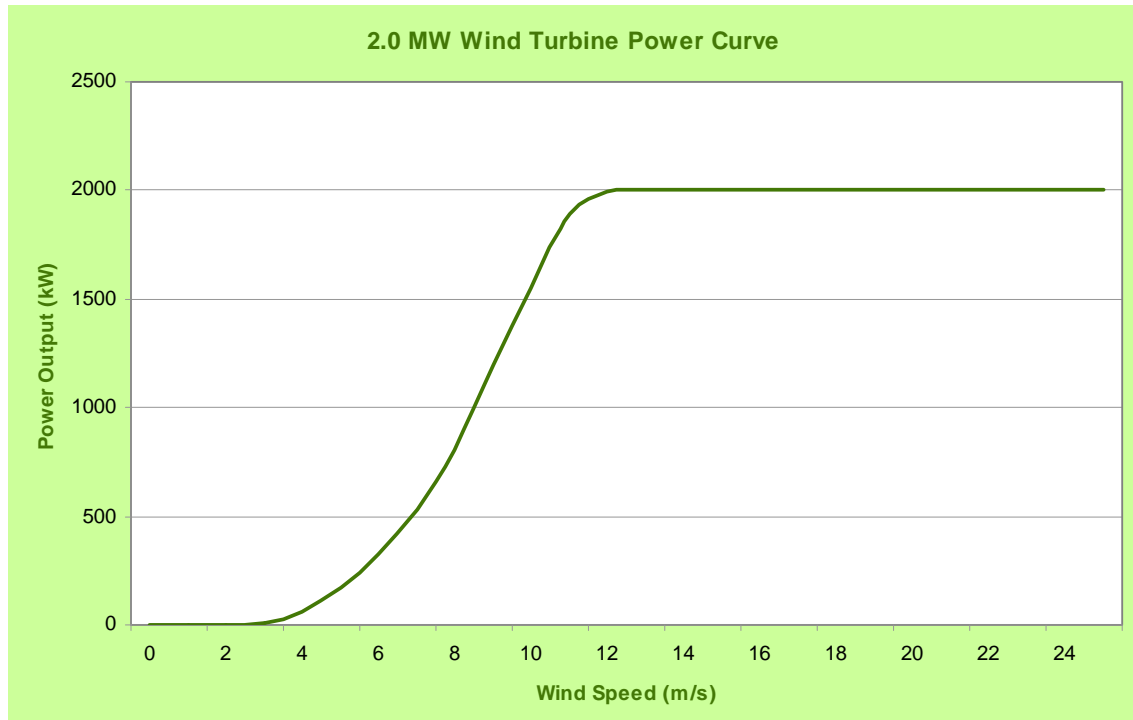
Generator

Type: Synchronous, permanent magnet
Noise Reduction: Class F insulation
Reliability: IP54
Speed: 1,300 – 2,300 RPM

Gear Box

Type: Combined planetary/helical gearbox

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Pitch System

Type: Independent blade pitch per rotor blade with emergency power supply

Drive: DC electro servo-drive

Failsafe Brake: Battery back-up

Controller

Type: Computer

Remote Control: Internet

SCADA: WPPIS (via Internet)

Yaw System

Type: Ball bearing

Brake: Active hydraulic disc brakes

Motor: 4-asynchronous

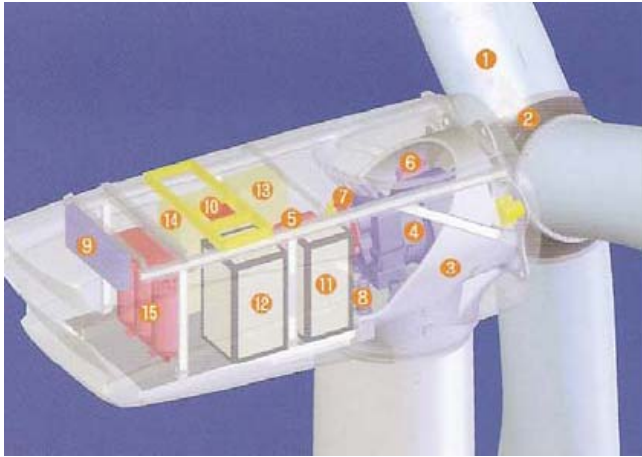
Power Converter

Type: I.G.B.T. Pulse Width Modulation (PWM) control

Voltage: 1,100Vrms

Frequency: 50/60Hz

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|---------------------|--------------------|
| ① Blade | ⑫ Power Converter |
| ② Rotor Hub | ⑬ Protection Panel |
| ③ Machine Frame | ⑭ AC Reactor |
| ④ Gearbox | ⑮ Main Transformer |
| ⑤ PM Generator | |
| ⑥ Torque Arm Damper | |
| ⑦ Rotor Brakes | |
| ⑧ Yaw Drive | |
| ⑨ Cooling System | |
| ⑩ Service Crane | |
| ⑪ Controller | |

Weight:
Nacelle: 75 mt
Rotor: 45 mt
Tower (80m): 125 mt