

JSW J82-2.0

JSW Wind Turbine System/2MW Permanent Magnet Synchronous Gearless Wind Turbine Generator



Technical Data

Main Specification	J82-2.0/II
Rated Power	2000kW
Cut-in Wind Speed	3.5m/s
Rated Wind Speed	13m/s
Cut-out Wind Speed	25m/s
IEC Class	S
Extreme Wind Speed according to IEC61400 class I	70m/s
Average Wind Speed	8.5m/s (II)
Turbulence Intensity	0.18

Rotor

Diameter	83.3m
Rated Rotational Speed	19rpm
Length of Blade	40m
Material	GFRE

Tower

Hub Height	70m
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Electrical Specifications

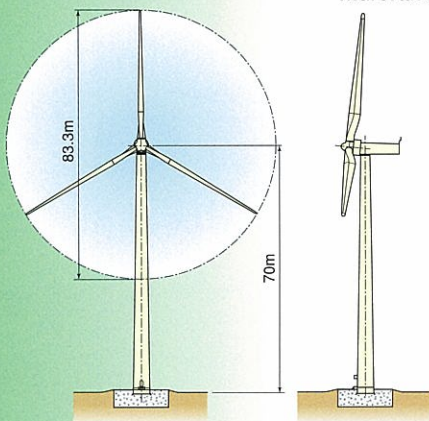
Generator Type	Direct-Drive-Gearless Permanent Magnet Synchronous Generator
Nominal Voltage	660V
Transformer Output Voltage	6.6kV, 22kV or 33kV
Voltage Frequency	50/60Hz

Control

Output Control	Pitch control, variable speed control
Yaw Control	Active yaw control

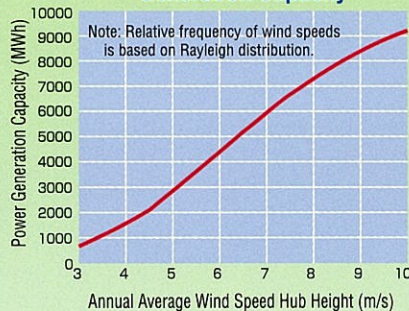
Weight

Rotor	42 tons
Nacelle + Sub Frame	34 tons
Generator	60 tons
Tower	145 tons (Hub Height 70m)



Muroran J82-2.0

Estimated Annual Power Generation Capacity



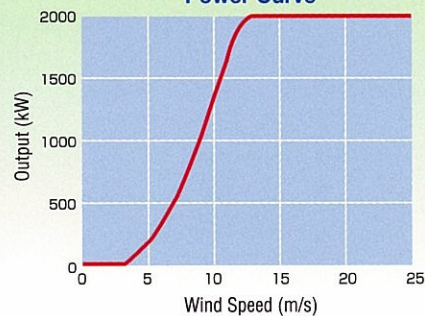
Estimated Annual Performance of the J82 Wind Turbine

Average Wind Speed	6m/s	7m/s
Power Generation	Approx. 4400MWh	Approx. 5941MWh
CO ₂ Reduction	Approx. 3100 tons	Approx. 4180 tons

Notes:

1. Estimated power generation is based on the average annual wind speed at the hub height.
2. CO₂ reduction is estimated in comparison with oil fired power system. (0.704kg-CO₂/kWh)

Power Curve

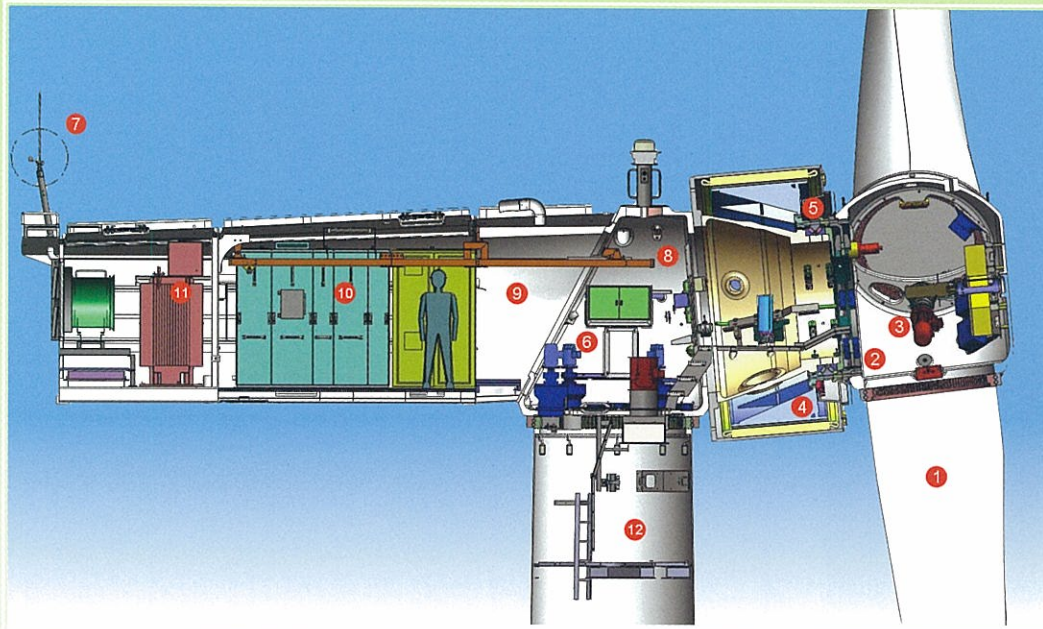


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JSW has introduced the basic technology of direct drive permanent magnet gearless wind turbines and has improved it to fit for purpose by our modern technology.



Muroan Plant



- 1 Rotor Blade
- 2 Hub
- 3 Blade Pitch System
- 4 Generator
- 5 Main Bearing
- 6 Yaw System
- 7 Wind Vane and Anemometer
- 8 Nacelle
- 9 Sub Frame
- 10 Converter
- 11 Transformer
- 12 Tower

FEATURES

High efficiency

Direct gearless drive eliminates gear loss and synchronous generator with permanent magnet offers high efficiency compared with conventional design.

High reliability

Use of the permanent magnet-excited synchronous generator eliminates the need for any step-up gear and the unique design with no abrasion parts such as brushes ensures high reliability.

Low noise

Gearbox, which is the major source of noise claim, is omitted.

Low maintenance cost

In addition to high reliability, the number of parts requiring oil lubrication is minimized thanks to the design with no step-up gear and main shaft, thereby ensuring a remarkable reduction of maintenance cost.

Less influence to grid

The full conversion of the power leads to several advantages for the power quality supplied and the flexibility offered to the grid operator. Special features can be offered concerning grid power management, such as $\cos \psi$ improvement, even without power production of the wind turbine.



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