

Pioneer P250/29.6

**Pioneer
Wincon**

*go green
go with
pioneer*



Pioneer Wincon

Transforming the Power of Wind

Corporate Profile

Pioneer Wincon Private Limited (PWPL) is a member company of the Pioneer Asia Group having diverse interests in safety matches, chemicals, non-ferrous, forgings, textiles, information technology etc. The promoters of Pioneer Asia Group are the first in India to install and connect private wind farms to the state electricity board as early as 1989. PWPL was incorporated in the year 1996 and has over the last two decades become a trusted name and an emerging market leader in wind energy. The core business consists of design, manufacture, marketing and maintenance of wind power systems that harness the energy of wind to generate green power. PWPL is an ISO 9001:2008 certified company. The corporate office is in Chennai and the manufacturing facility is in Pondicherry, 160 km from Chennai.

Technical know-how

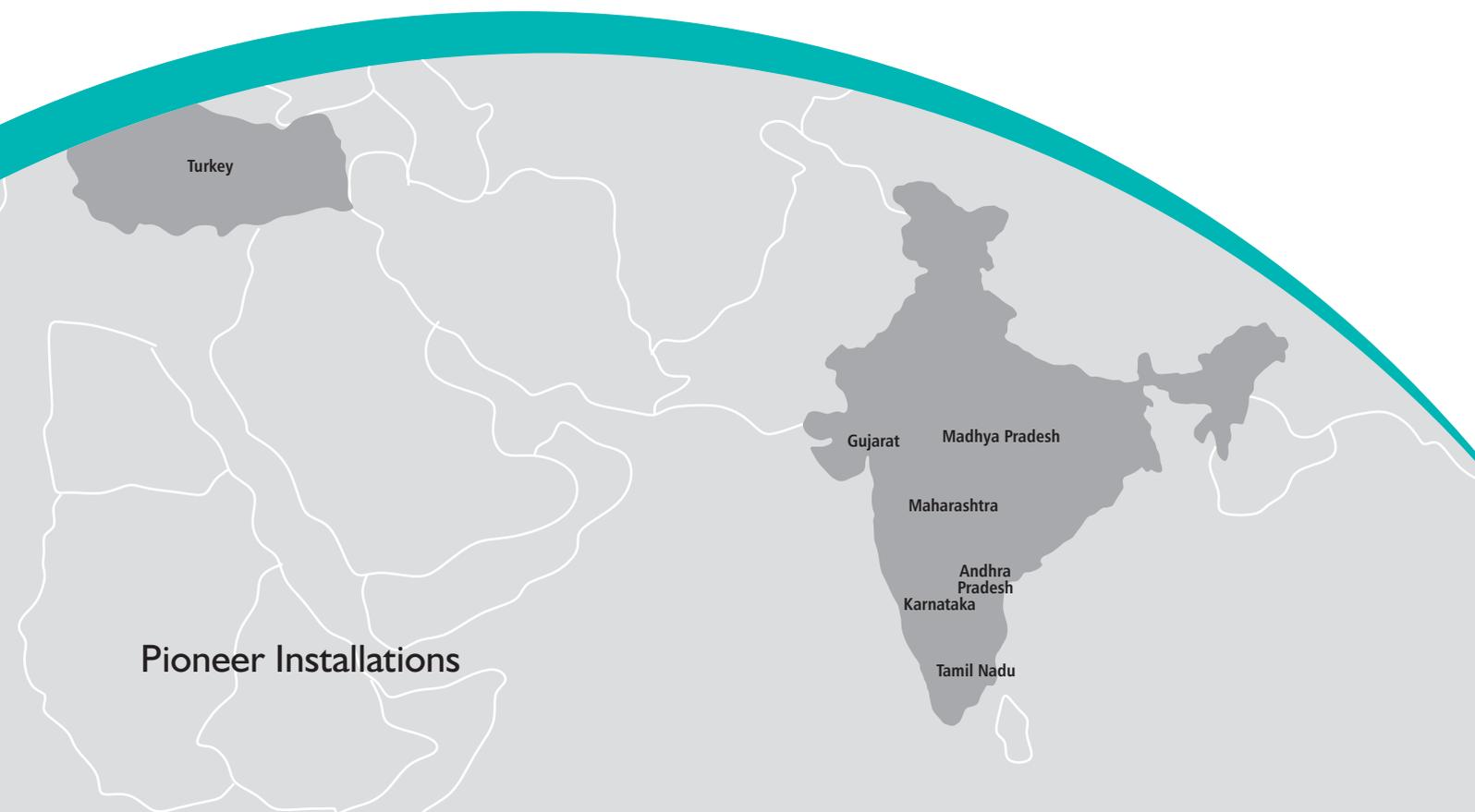
Pioneer Wincon Private Limited was formed as a joint venture between Pioneer Asia Group and Wincon West Wind of Denmark (as a division of Vest Frost, A/s Denmark) well known for their turbine's simple and sturdy design and advanced power electronics. Following the exit of the Joint Venture partners in 2003, PWPL is now a wholly owned Indian Company with the design and technology ownership to manufacture and market the wind turbines globally.

Market Leaders

PWPL has installed more than 950 numbers of 250 KW and 750 KW WTGs in Tamil Nadu, Karnataka, Andhra Pradesh, Madhya Pradesh, Maharashtra and Gujarat.

Land mark in Exports

Our 250KW wind turbine exported to Turkey is successful in generation since October 2010.



Turkey

Gujarat

Madhya Pradesh

Maharashtra

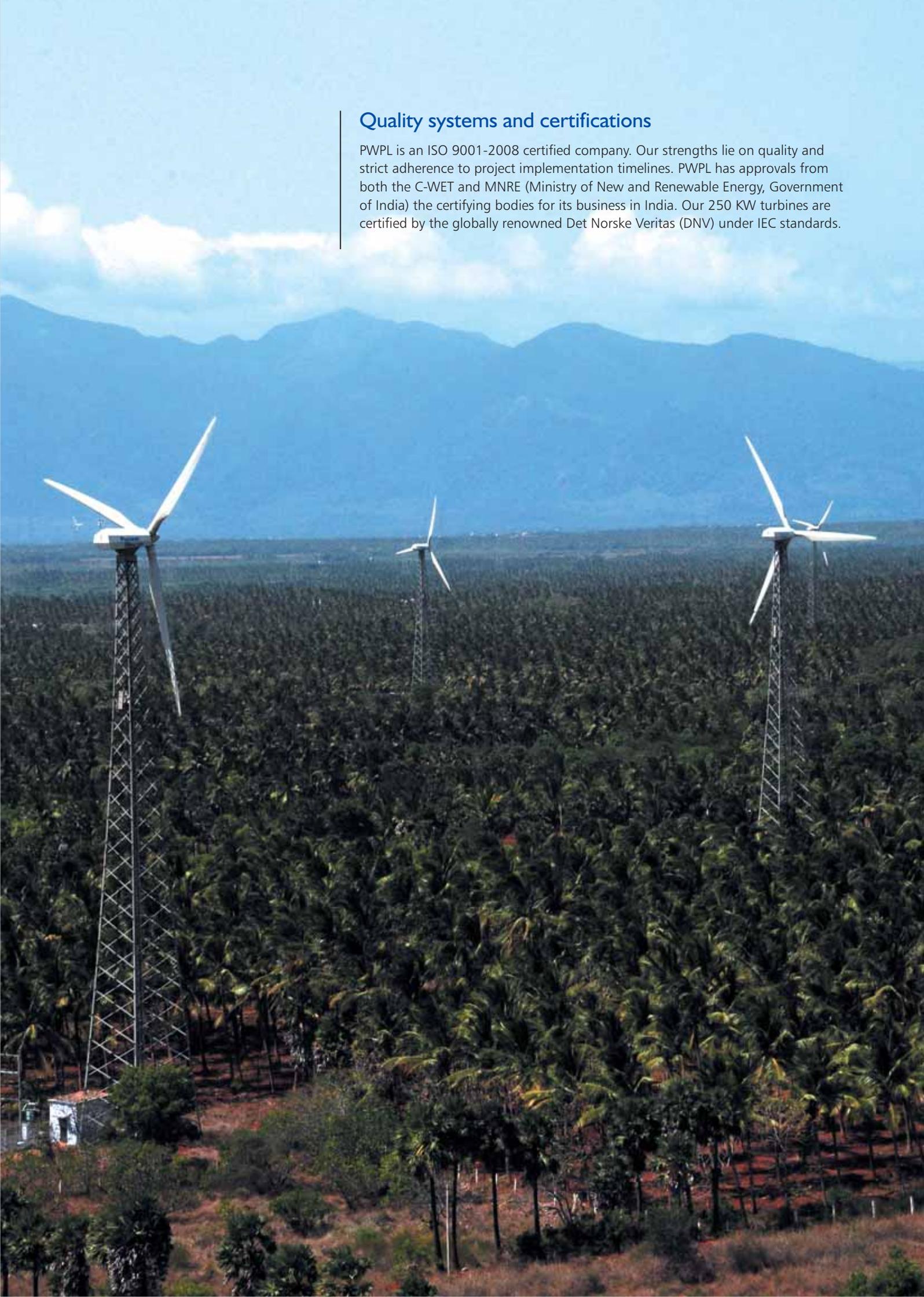
Andhra Pradesh
Karnataka

Tamil Nadu

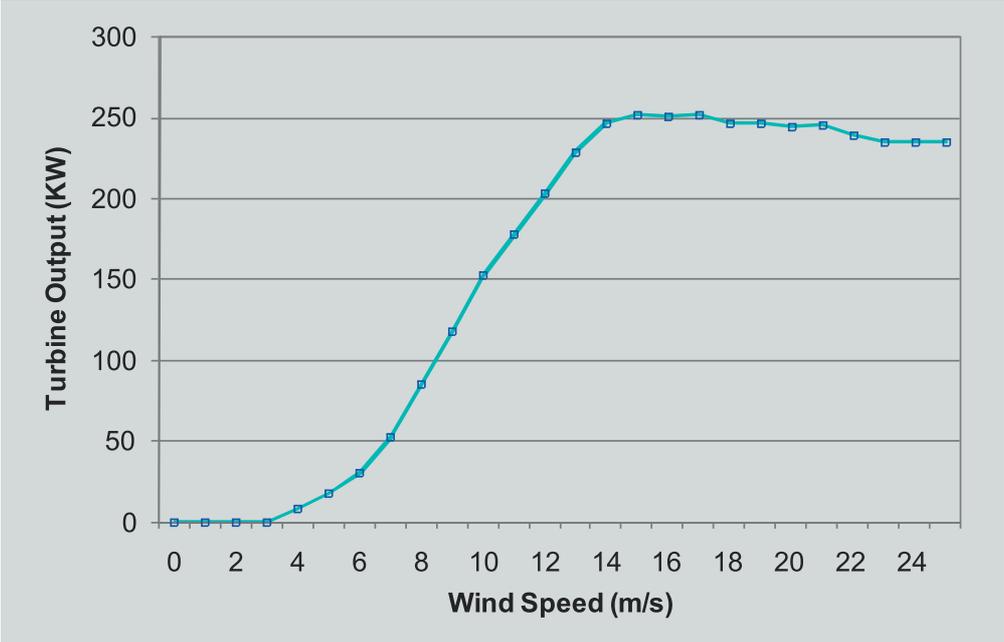
Pioneer Installations

Quality systems and certifications

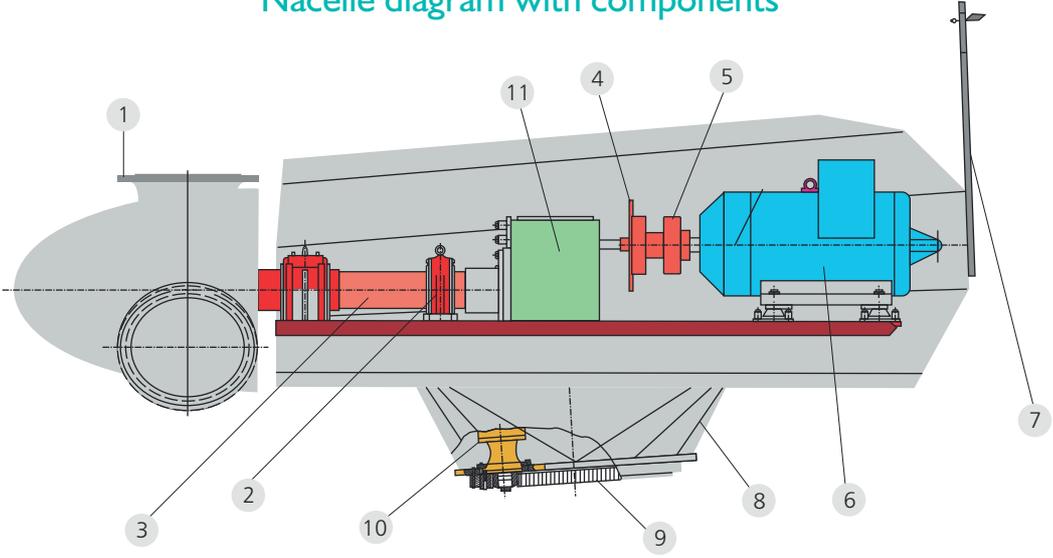
PWPL is an ISO 9001-2008 certified company. Our strengths lie on quality and strict adherence to project implementation timelines. PWPL has approvals from both the C-WET and MNRE (Ministry of New and Renewable Energy, Government of India) the certifying bodies for its business in India. Our 250 KW turbines are certified by the globally renowned Det Norske Veritas (DNV) under IEC standards.



Power curve chart for P250/29.6 WTG



Nacelle diagram with components



- | | | |
|--------------------|-------------------------|-----------------|
| 1. Hub | 5. Flexible Coupling | 8. Bottom Frame |
| 2. Bearing Housing | 6. Generator | 9. Slew Ring |
| 3. Main Shaft | 7. Wind Vane Anemometer | 10. Yaw Motor |
| 4. Brake Disc | | 11. Gear Box |

Technical Specifications* P250/29.6 WTG

1. General Data

Nominal power _____ 250 KW
Rotor diameter _____ 29.6 m
Swept area _____ 688.4 m²
Hub height _____ 50.0 m

2. Operational Data

Cut-in, wind speed _____ 3.5 m/s
Rated wind speed _____ 15.0 m/s
Cut- out, wind speed _____ 25.0 m/s
Survival, wind speed for 2 sec max. _____ >52.5 m/s

3. Rotor

No. of blades _____ 3 Nos
Rotor position _____ Up wind
Rotor speed _____ 38.5 RPM
Rotor diameter _____ 29.6 m
Swept area _____ 688.4 m²
Tip speed, blade _____ 59.68 m/s
Regulation _____ Stall
Tilt _____ 4°
Weight, rotor _____ 3900 Kg.

4. Blade

Type _____ LM 13.4
Profile data _____ NACA 63-4xx y FFA-W3
Length _____ 13.4 m
Material _____ Fibre glass reinforced polyester
Weight _____ 750 kg

5. Hub

Type _____ Cast
Material _____ GGG 40.3

6. Main Shaft and Bearings

Type, shaft _____ Forged
Material _____ Steel alloy, 34CrNiMo6
Type, bearings _____ Spherical roller bearings
No. of bearings _____ 2

7. Gearbox

Type _____ Helical, 3 stage
Ratio _____ 1:39.5
Lubrication _____ Splash
Oil volume _____ 90 lts.

8. Brake Systems

Mechanical brake _____ Hydraulically activated disc brake
Brake position _____ High-speed shaft
Aerodynamic brake _____ Hydraulically activated
pivotal blade Tip Brake

9. Couplings

Main shaft - gearbox _____ Shrink disc
Gearbox - generator _____ Flexible coupling

10. Generator

Type _____ 6 - pole/4 - pole induction
Rated power _____ 60 KW / 250 KW
Voltage _____ 415 V
Frequency _____ 50 Hz
Synchronous speed _____ 1000 / 1500 RPM
Insulation class _____ H
Protection class _____ IP 55
Weight _____ 1500 Kg.

11. Bedplate

Type _____ Welded
Profiles, steel _____ C & RHS
Surface treatment _____ Zinc spary coating

12. Yaw System

Yaw top _____ Ball Bearing
Yaw drives, motor _____ Electric (2 x 0.55 kw)
Yaw drives, gear _____ Planetary (x 2)
Dampening system _____ Disc mounted on tower top
Yaw speed _____ 1° per sec

13. Wind Turbine Controller

Type _____ Microprocessor
Power factor _____ Cos phi > 0.95
Control and monitoring of : _____ Imbalance
_____ Generator overload
_____ Yaw drives overload
_____ Automatic cable untwisting
_____ Activation of brake systems
_____ Voltage fluctuations, grid
_____ Grid failure
_____ Generator overspeed
_____ Rotor overspeed
_____ Automatic adjustment of power factor

Temp. measurements on: _____ Control panel, gear oil
_____ High-speed shaft bearings
_____ Generator windings

14. Tower

Type _____ Lattice
Height _____ 49 m
Surface treatment _____ Hot dip Galvanized
Weight total _____ 24000 kgs.
Tubular Tower available on request.

15. Nacelle

Weight, excl. rotor _____ 12500 kgs.

16. SCADA

Type: 1) GPRS based remote monitoring, real time
2) SMS based monitoring of all turbine functions

* In view of continuous product improvement, specifications are subject to change without prior notice.



Pioneer Wincon

Pioneer Wincon Private Limited

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