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PIONEER WINCON P250 29 250KW WIND TURBINE

- The most efficient, well proven and cost efficient 250KW wind turbine available
- **Annual Service Level Agreement** - Comprehensive operations and maintenance program inclusive of a **95% Technical Availability Warranty** and a **95% Power Curve Warranty**. Scheduled and unscheduled maintenance services fully inclusive of parts, service and labour
- **2 Year Standard Manufacturer Warranty** – Optional Extended Warranty from commissioning of each wind turbine - £10,500 per annum up to 5 years.



Manufactured in India by Pioneer Wincon Private Limited (“PWPL”), the P250 250KW is a well proven and robust wind turbine design optimised by our group for the UK Grid and climate conditions.

Pioneer Wincon Private Limited (PWPL), a member company of the Pioneer Asia Group is a market leader in the manufacture of 250KW wind turbines, with over 800 machines in operation throughout Asia.

The Pioneer Asia Group, which today boasts a group annual turnover of over £60 million, was the first in India to install a private wind farm connected to the TNEB grid in 1989. PWPL was conceived as a joint venture between the Pioneer Asia Group and Wincon West Wind of Denmark, well known for their turbine generator's simple, sturdy design and advanced control systems.

PWPL is an ISO 9001:2000 Certified company, their strengths lie in the localization of components without compromising on quality and with a strict adherence to project implementation timelines.

PWPL has approvals from both C-WET and MNRE (Government of India) for its business in India. PWPL turbines are certified by the globally renowned DET Norske Veritas (DNV) with IEC standards.

Projects are developed exclusively in the UK and Ireland by Empowering Wind Group and the PWPL engineering team.

P250 29 TECHNICAL SPECIFICATIONS

General Data

Generator

Rated Power	250KW	Type	6 pole / 4pole asynchronous
Power Regulation	Stall	Rated Power	250KW
Rotor Diameter	29m	Voltage	415V
Rotor Speed	25 / 38 RPM	RPM	1,000 – 1,500
Hub Heights	30m, 40m or 50m (Lattice or monopole)	Protection Class	IP 55
Cut In Wind Speed	3m/s		
Cut Out Wind Speed	25m/s		
Swept Area	660.2 M ²	IEC Class	111 A

Yaw System

Brake System

Type	Ball Bearing	Mechanical Brake	Disk Brake
Yaw Brakes	Permanent friction brake	Position	High speed shaft
Yaw Drives	2 motors, worm gear	Aerodynamic Brake	blade tips
Control	Wind Vane		

Controls

Monitoring

Type	Microprocessor	Power Quality	Voltage, Current, Frequency, Power Factor, Power Output
Power Factor	Cos phi > 0.95	RPM	Rotor and Generator
Temperature Monitoring	Generator, windings, thyristors, gearbox bearings and control panel	Wind Speed and Direction	Wind Vane / Anemometer

The reference sites below demonstrate the turbine’s successful performance record even at sites with less than ideal average mean wind speeds;

WTG: 05

SITE: KODIKURICHI, TAMIL NADU, INDIA

GPS: N-09*00.934 (Lat)
E-077*19.762 (Long)

MONTH	WIND SPEED		GENERATION UNITS	RUN HRS	MA %	GA %
	AVG	MAX				
Apr-10	4.6	10.5	19520	240	96.7	93.1
May-10	7.9	12.8	78064	589	99.7	100.0
Jun-10	9.9	14.8	99852	712	100.0	99.3
Jul-10	7.9	12.6	82128	689	99.6	98.0
Aug-10	9.1	13.2	93760	705	99.9	94.9
Sep-10	7.5	11.9	58912	592	99.7	84.3
Oct-10	6.2	9.5	56308	640	99.5	98.7
Nov-10	3.6	5.4	10166	301	100.0	97.2
Dec-10	3.3	8.7	8220	315	99.4	99.3
Jan-11	3.2	5.9	4504	319	99.4	98.2
Feb-11	3.1	5.1	2744	251	99.7	88.4
Mar-11	3.8	7.1	8048	403	99.6	99.6
TOTAL	5.8		522226	5756	99.4	95.9

WTG: 04

SITE: KODIKURICHI, TAMIL NADU, INDIA

GPS: N-09*00.788 (Lat)

E-077*19.697 (Long)

MONTH	WIND SPEED		GENERATION UNITS	RUN HRS	MA %	GA %
	AVG	MAX				
Apr-10	4.6	10.5	18380	239	96.6	93.1
May-10	7.9	12.8	79728	588	99.6	100.0
Jun-10	9.9	14.8	103256	711	99.9	99.3
Jul-10	7.9	12.6	87687	687	99.3	98.0
Aug-10	9.1	13.2	99124	704	99.7	94.9
Sep-10	7.5	11.9	61592	574	98.5	82.8
Oct-10	6.2	9.5	56052	629	98.1	98.7
Nov-10	3.6	5.4	10832	289	96.6	97.2
Dec-10	3.3	8.7	7774	286	99.4	99.3
Jan-11	3.2	5.9	4436	277	99.4	98.2
Feb-11	3.1	5.1	2748	233	99.7	88.4
Mar-11	3.8	7.1	7502	355	99.1	99.6
TOTAL	5.8		539111	5572	98.8	95.8



- Prices from £235,000 + VAT inclusive of transportation to sites in the UK and Ireland (30m Tower and Complete Unit Less Installation and Grid Connection Costs)
- Annual Service Level Agreement from £12,640 + VAT
- Final Contract Price for the installation, commissioning, operation and maintenance provided following our site assessment