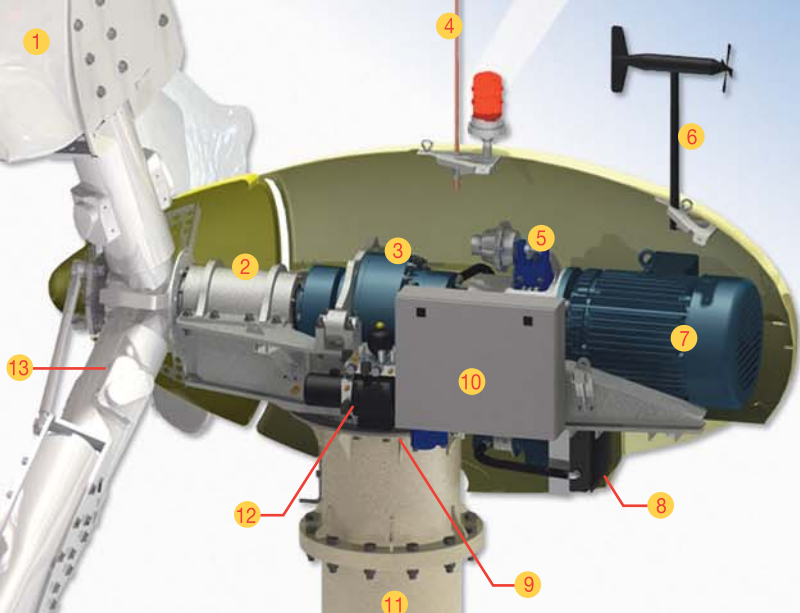




PGE 20/35
PGE 20/50

60 Hz

THE QUIET POWER



- 1 9 m Blade
- 2 Main Shaft with Two Bearings
- 3 Gearbox
- 4 Lighting Protection
- 5 Brake System
- 6 Anemometer Windvane
- 7 Generator
- 8 Cooling System
- 9 Passive Yaw Control with Brake
- 10 Control Panel
- 11 Tower
- 12 Unbalance Detection
- 13 Pitch Control System (patent pending)

**THE HIGHEST ANNUAL ENERGY PRODUCTION IN ITS CATEGORY
FOR LOW AND MEDIUM WIND SPEEDS**

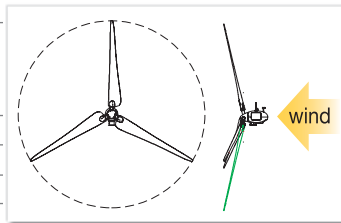
www.energiepge.com

PGE 20/35 & PGE 20/50

SPECIFICATIONS

TURBINE

Configuration	3 blades, horizontal axis, downwind	
Rated power @ 11 m/s	35 kW	50 kW
Applications	Grid-Tied Stand Alone	Grid-Tied
Rotor speed	35 rpm	40 rpm
Cut-in wind speed	3 m/s (11 km/h, 7 mph)	3.5 m/s (12.5 km/h, 8 mph)
Cut-out wind speed	25 m/s (90 km/h, 56 mph)	
Survival wind speed	52.5 m/s (190 km/h, 118 mph)	
Wind turbine class	Based on IEC 61400-1 class III	
Design lifetime	20 years	
Operating ambient temperature range	Standard: -20°C (-4°F) to 35 °C (95°F) Cold package version: -30°C (-22°F) to 35 °C (95°F)	
Yaw control	Passive with brake	
Gearbox	Planetary	
Lighting protection	Lighting rod on top of nacelle	
Noise level	Inaudible at 200 m (656 ft)	
Overall weight	3420 kg (7540 lb)	



ROTOR

Rotor diameter	19.2 m (63 ft)
Swept area	290 m ² (3120 ft ²)
Blade length	9 m (29.6 ft)
Blade material	Fiberglass / Epoxy
Power regulation	Passive stall (Grid-Tied) Electrical and pitch control (Stand Alone)

GENERATOR

Frequency	60 Hz
Voltage	240 V (35 kW only), 480 V, 600 V
Phase	Single phase (35 kW) Three-phase (35 kW & 50 kW)
Types	Induction (Grid-Tied) Synchronous (Stand Alone)

BRAKE AND SAFETY SYSTEMS

Main brake system	Fail-safe brake disc on high speed shaft
Secondary safety	Pitch control system (for over speed regulation) using passive spring loaded mechanism (<i>patent pending</i>)
Automatic shut down in case of :	- Over speed - High wind speed - Grid failure

CONTROLS

PLC based	Including touch screen interface
Options	Remote control & configuration, SCADA,...

WARRANTY

Turbine, controls	2 years* (*5 year warranty available)
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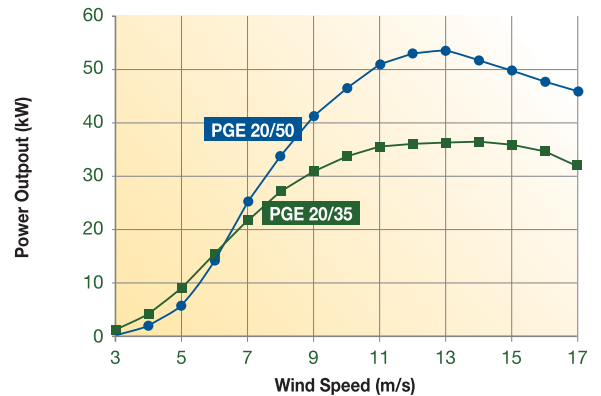
TOWERS

Types and heights	Tubular guyed 24 m (80 ft) Lattice 30 m (100 ft), 36 m (120 ft) Monopole 30 m (100 ft), 36 m (120 ft), 42 m (140 ft)
Options	For tubular guyed and lattice towers - Tilt-up versions with / without integrated lifting system - Steel buried structure (foundations)



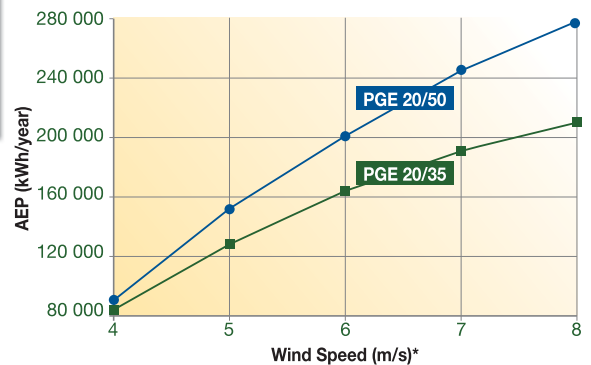
PERFORMANCE

POWER CURVE



Based on IEC 61400-12 Standard. Grid-tied three-phase turbine.

ANNUAL ENERGY PRODUCTION (AEP)



* AEP based on 10 m height wind measurements and 25 m hub height (100% availability).
This data must be used as an estimate of expected turbine performance.

WIND SPEED M/S	35 kW		50 kW	
	POWER OUTPUT kW	AEP KWH/YR	POWER OUTPUT kW	AEP KWH/YR
3	1,1	-	-	-
4	4,2	85 000	2,0	89 000
5	9,1	126 000	5,8	147 000
6	15,4	161 000	14,3	199 000
7	21,7	188 000	25,3	242 000
8	27,1	208 000	33,8	273 000
9	30,9	-	41,3	-
10	33,7	-	46,5	-
11	35,5	-	50,9	-
12	36,0	-	52,9	-
13	36,3	-	53,5	-
14	36,4	-	51,7	-
15	35,9	-	49,7	-
16	34,6	-	47,6	-
17	31,9	-	46,0	-

WIND SPEED CONVERSION TABLE

m/s	4	6	8	10	12	25	35	45	55
km/h	14	22	29	36	43	90	125	160	200
mph	9	13	18	22	27	56	80	100	125

Specifications subject to change without prior notice.



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