ergo Wind

20 kW

Wind Turbine
EW 20

Ergo Wind srl

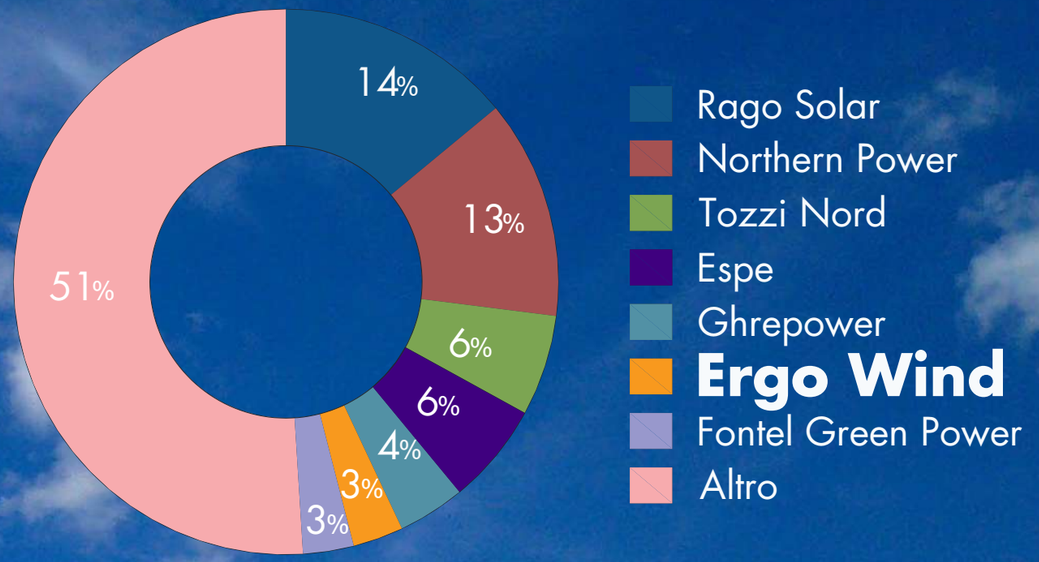
Ergo Wind is a leader in offering low environmental impact energy systems for the small wind market. Right from its founding, the company has always invested in research and development of new technologies, cooperating in partnership with the highly qualified team of TCS Energie, a successful company with thirty years of experience in the field of renewable energy sector. Ergo Wind core business is represented by small wind turbines from 20 to 60 kW power, designed and manifactured in its factory located in Pesaro, with the precious partnership of Università Politecnica delle Marche and other influential Italian and European companies.
Their strategic technical choices rank Ergo Wind small turbines among small wind products with the best value for money on the market and guarantee maximum reliability, efficiency and durable functioning over time. In order to ensure full transparency, Ergo Wind allows to visit its factory and supplies monitoring system that allow the access to statistical data of wind turbine installed.
Its qualified staff is also able to offer technical support and assitance for siting process and due diligence.
Its after sales and maintenance centers are located throughout the country.

Ergo Wind turbines are designed and manufactured according to IEC 61400-2 regulation. Every mechanical and electromechanical component is realized by qualified European and Italian companies, in order to guarantee maximum reliability, efficiency and durable functiong over time.

WE CANNOT
SOLVE OUR PROBLEMS
WITH THE SAME LEVEL OF THINKING
THAT CREATED THEM.

Albert Einstein

Ergo Wind among the top 4 italian companies and among the top 7 global sales companies in Italy



Extract from the market analysis of wind turbine manufacturers from 20 to 60 kW to the plants built in the two-year period June 2015 - June 2016 in Italy.
Source: Il punto sull'eolico, October 2017, GSE - Gestore Servizi Energetici

100% wind energy!

1

The lowerable/raisable hydraulic tower allows to reduce drastically maintenance costs.

2

No Inverter.

"IF IT ISN'T THERE,
IT CAN'T BREAK."

Henry Ford

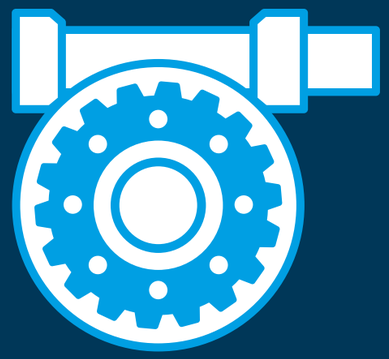
3

Our investors can count on the access to objective and demonstrable production data.

TRUSTWORTHINESS

STALL REGULATED SYSTEM

When the wind speed increases and the turbine is at the top of speed, the blades, specifically designed with this technology, limit automatically and progressively the power captured by the wind. This allows the turbine to work constantly even with high wind speed, without the need for yaw system to limit the power, avoiding overload and taking advantage for the durability of the components.

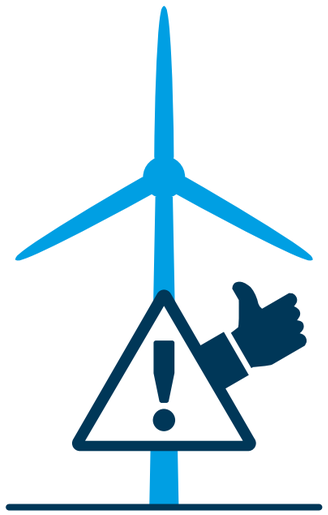


YAW SYSTEM

The yaw system is composed by a slewing drive able to guarantee high rotational coupling and rotor locking during operation. The hydraulic motorization gives profits in terms of trustworthiness, performance, lightness, obstacle and maintenance. The pump of the slewing drive is located inside the technical compartment on the ground. Its special sensors allow to optimize the wind heading thanks to accurate corrections.

REDUNDANT SAFETY

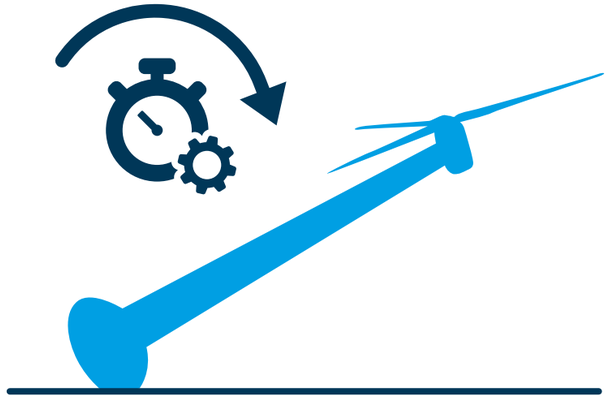
The safety of the wind turbine is guaranteed thanks to the adoption of redundant braking systems. The negative electromechanical braking system acts promptly and fastens the rotor in absence of any power source. The aerodynamic brake, installed on each blade, is automated and completely mechanical and acts by limiting the improbable overspeed of the rotor. Furthermore, this system keeps the appendixes anchored to the hub through a steel cable inside the blade.



LOW INSTALLATION AND MAINTENANCE COSTS

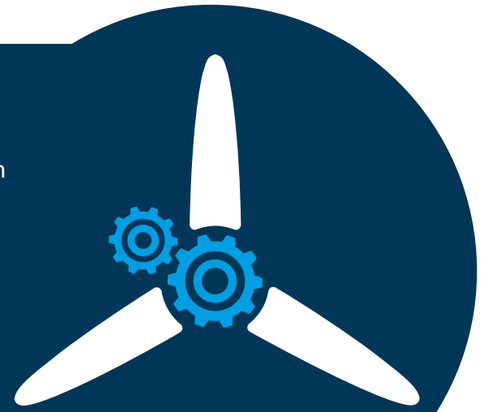
HYDRAULIC TOWER

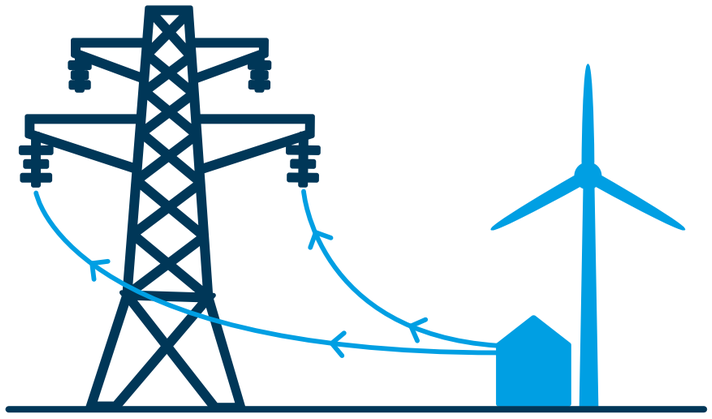
Our wind turbines have a tower provided with an hydraulic system for the lifting and lowering, in order to obtain economic advantages both during installation and maintenance, as all the operations are carried out in the ground and not in altitude. The time required to lower/raise the turbine are approximately 20 minutes, without the utilization of cranes, platforms or operators trained to work in high altitude.



HUB

The hub is made by a single block in high-strenght aluminium alloy. Inside there is a cast iron bush for the coupling of turbine shaft. Each hub is x-rayed, connecting the benefit of the lightness and trustworthiness.





DIRECT CONNECTION TO THE POWER GRID WITHOUT INVERTER

Our wind turbines are connected directly to grid power without inverter (through the interface system required by the electricity service provider), increasing the global efficiency of the system and deleting the odds of damages in electronic devices.

TECHNICAL FEATURES

Wind Turbine	
Configuration	Upwind
Rated power (kW)	20
Rated generator speed (Rpm)	78
SWT Class IEC 61400-2	II
Cut-in wind speed (m/s)	3
Rated wind speed (m/s)	10
Cut-off wind speed (m/s)	25
Survival wind speed (m/s)	59,5
Tower top mass (nacelle and rotor) (kg)	1100

Rotor	
Rotor diameter (m)	10,8
Swept area (m^2)	92
Blade lenght (m)	5,1
Blade material	Reinforced fiber glass
Power regulation	Aerodynamic stall

Generator	
Tipology	Asynchronous
Configuration	Three phases, 4 poles, 400Vac
Rated power (kW)	20
Multiplier	Two stages parallel axes

Inverter	No

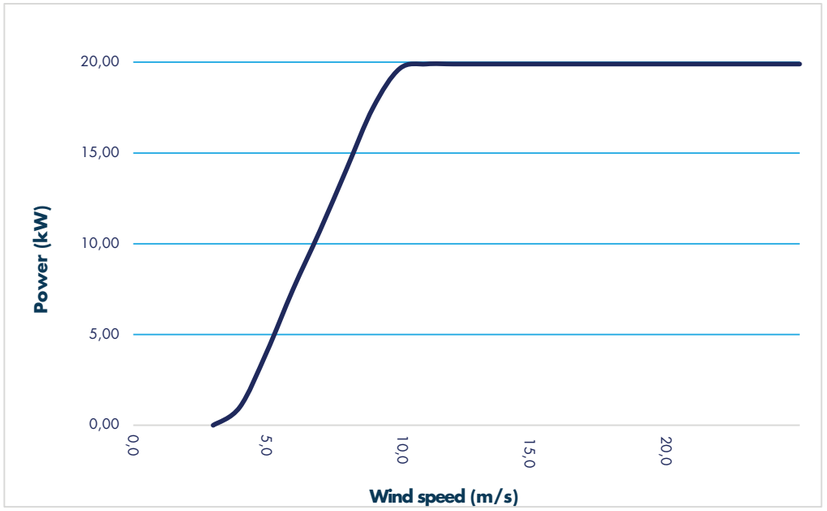
Braking systems and safety	Negative brake system on the turbine/aerodynamic brake/yaw system

Control systems	
Control system	PLC + Touch Screen
Monitoring system	Web app, daily/weekly/monthly/annual report

Towers	
Hub heights available (m)	24
Tower typology	Polygonal section tower with lowerable/raisable hydraulic system

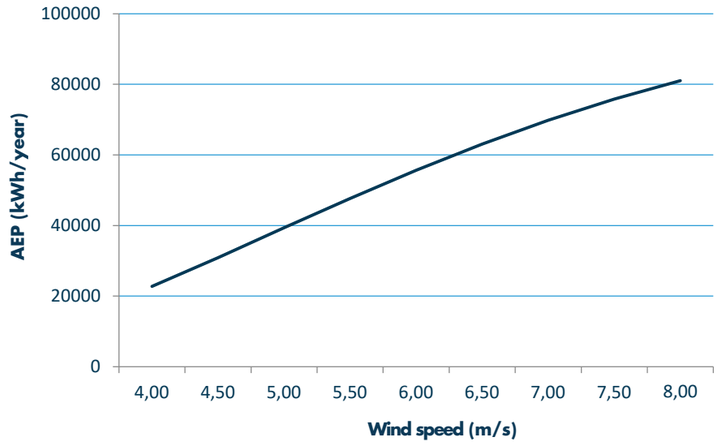
Warranty	2 years with possibility of extension

EW20 - Power curve



EW20 - Gross Annual Electricity Production

Wind speed (m/s)	AEP (kWh/year)
4,0	22742
4,5	30916
5,0	39351
5,5	47684
6,0	55651
6,5	63070
7,0	69818
7,5	75818
8,0	81021



*Data shown in graphs are calculated and based on this conditions using:
k (shape parameter,Weibull slope) equal to 2 and air density in standard conditions (equal to1,225 Kg/m³).
**Ergo Wind reserves the right to alter product specifications without prior notice.

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