A low-angle photograph of a white wind turbine against a clear blue sky. The turbine's three blades are visible, with one blade extending from the bottom left towards the top center. The nacelle and tower are also visible, with a small basket or platform attached to the tower.

T100

100kW WIND TURBINE

Argolabe Ingeniería



T100 100kW WIND TURBINE

T-100 wind turbine is designed for distributed energy applications, for both grid connection and off-grid systems. It is an excellent power-supply solution for a wide range of applications: industrial parks, factories, farms, wineries, harbours, quarries, state buildings, water pumpings and treatment stations, electric vehicles charging stations, dispersed and isolated complexes, etc.

T-100 is prepared to be installed on-site and to be connected to the local distribution grid, with low voltage and without distribution transformer.

T-100 concept design provides it with a high reliability and elevated performance. It is conceived to have high availability with very low maintenance. It is designed according IEC-61400-1 and G.L. Guideline for the Certification of Wind Turbines.

With 100kW rated power, T-100 is a medium sized cutting-edge wind turbine with an innovative concept. Through its load-bearing main frame concept, the drive train only receives torque loads, removing remaining negative loads over transmission. This drive train design implies a low-weight and high efficiency mechanical solution.



TECHNICAL SPECIFICATIONS

General

Type	3 bladed, horizontal axis
Rated power	100 KW
Design class	IEC IIIa
Cut-in wind speed	3.5 m/s
Rated wind speed	10.5 m/s
Cut-out wind speed	20 m/s
Power control	Variable speed - variable pitch
Others	No hydraulic system

Rotor

Diameter	22.5 m
Swept area	397.6 m ²
Rotor speed	17-50 rpm

Drive train

Gearbox	Helical, parallel shaft
Gearbox ratio	1:22.2
Generator	Permanent magnet synchronous. 8 poles

Grid

Power converter	IGBT – Full conversion, 4 quadrants
Voltage	400 V – low voltage
Frequency	50Hz / 60Hz

Tower

Height	34 m
Type	Conical tubular steel

MAIN TECHNICAL FEATURES:

- Optimized for lower wind regimes (3m/s). Maximum production (100kW) at 10,5m/s.

- High mechanical efficiency of its drive train, rotor and generator-converter electric system. No hydraulic systems.

- Advanced control system.

- Possibility of adapting the tower height to topographical, aerodynamic or regulatory conditions to location, to facilitate the acquisition of permits and/or to optimize power production.

- T-100 is entirely designed and assembled in Spain. Parts are manufactured in local companies under Argolabe supervision and commercial elements are provided by national or european suppliers.

- T-100 installation is simple and fast. Its surroundings are not affected since there is no need to build any road or to use any special machinery.

- T-100 wind turbine is design to perform with only one maintenance operation per year.

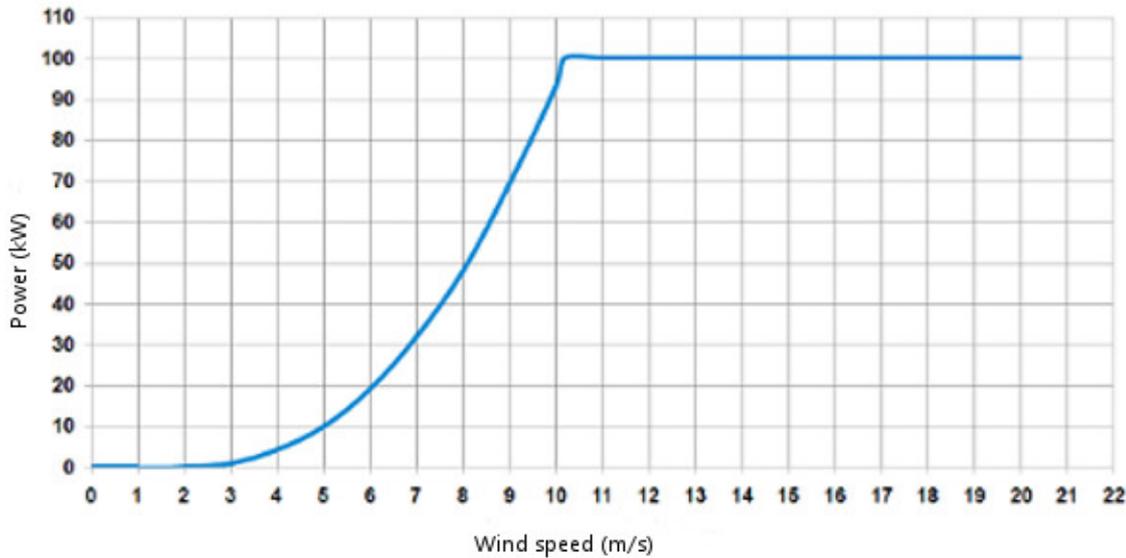
- The high aerodynamic and mechanic efficiency of this wind turbine imply a low noise level on operation, so it can be located near dwellings, without any prejudice to people.

- T-100 improves the quality of the power supply in distribution grids, and provides stability to local grids.



T-100 POWER CURVE

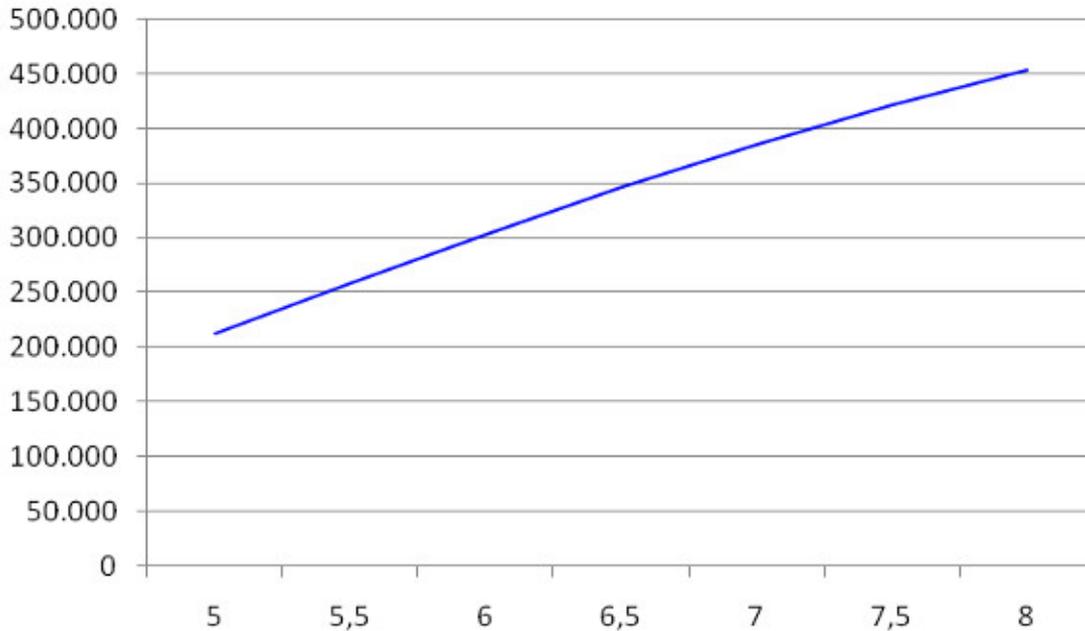
Standard conditions*.



Wind speed (m/s)	1	2	3	4	5	6	7	8	9	10
Production (kWh)	0	0	1,15	4,23	9,56	18,28	30,21	46,05	65,19	88,91
	11	12	13	14	15	16	17	18	19	20
	100	100	100	100	100	100	100	100	100	100

ANNUAL ENERGY PRODUCTION (kWh)

Standard conditions*.



Wind speed (m/s)	5	5,5	6	6,5	7	7,5	8
Annual production (kWh)	212.916	258.628	303.481	346.273	386.079	422.191	454.089

*Standard conditions: 1.225kg/m³ air density, rotor height 35m.

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