





Wind Turbine

# FREEN-9

**Small wind turbine generator with an installed capacity of 9 kW.**

Designed for on/off-grid power supply of small energy consumers and private households. Vertical ultra-light turbine is efficient in diverse regions under variable wind conditions.



your wind  your power  your way



## Highest proven power generation for VAWT in a class

The maximum wind energy conversion coefficient of small-sized Darrieus turbines on the market and the best use of turbulent air flows throughout the entire range of operating winds.



## Construction innovations for positive eco impact & smart operation

The small number of rubbing elements brings the O&M costs down, while the balanced assembly designs help to reduce noise emissions and threat to wildlife; moreover, the absence of construction permits and cost-effective dismantling process provide for flexibility in relocation options.



## A fair and transparent low price per kW stands out among other EU manufacturers

Our optimized production line in Estonia for manufacturing turbines with a patented soft blade design and outstanding generator parameters delivers ready-to-install prefab solutions in 6 months.



## Compatibility with PV and energy storage systems

Integration with solar panels and batteries via hybrid inverter allows to capture and use maximum power from the turbine. Easy setup for off grid use and microgrids connection to ensure full power independence.

### Freen OÜ



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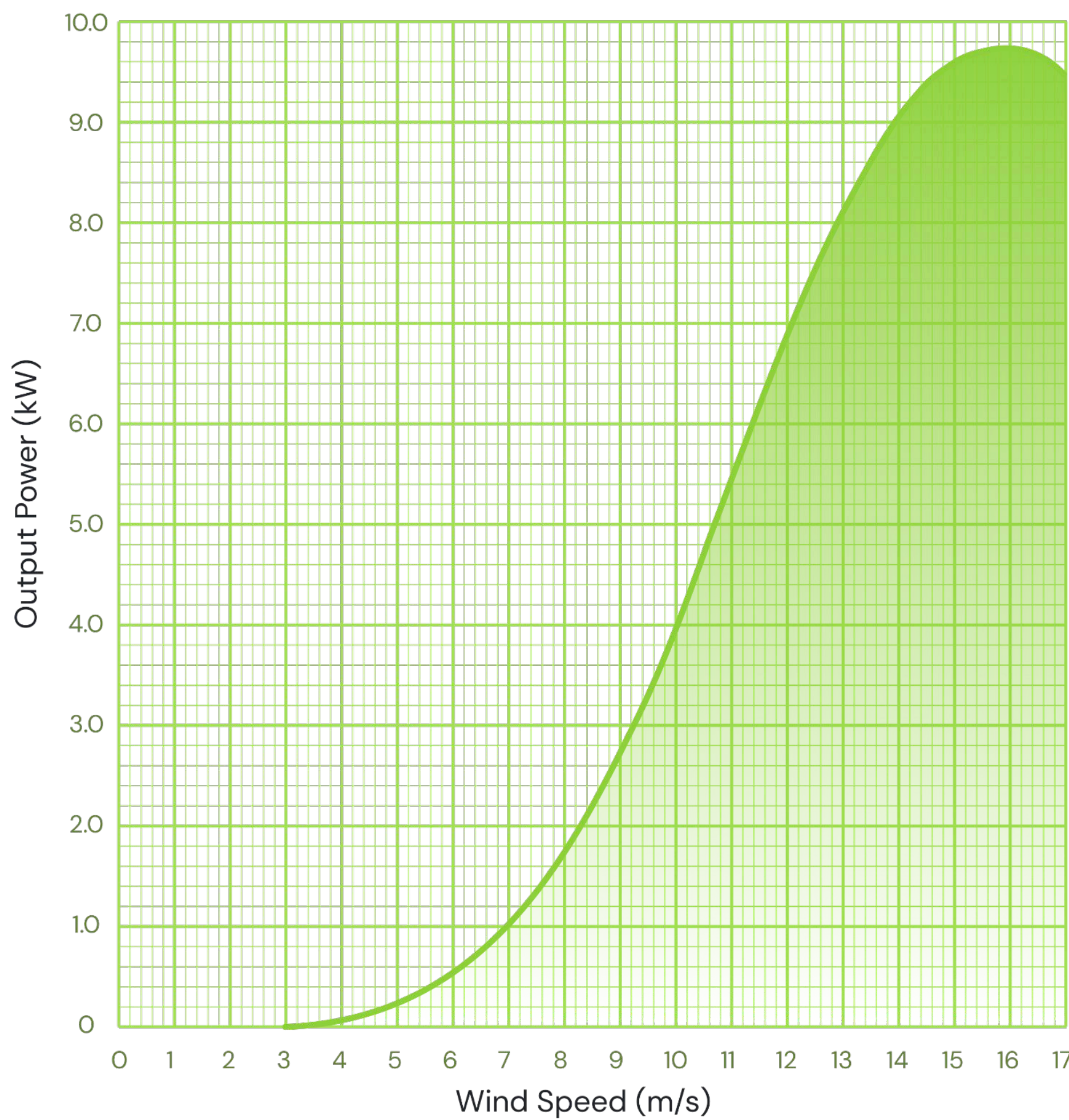
## Technical Specifications

Max power, (kW)	9.0
Cut-in wind speed, (m/s)	3.5
Cut-out wind speed, (m/s)	17.0
Wind class	IEC III, IV
Swept area, (m <sup>2</sup> )	24
Noise level at 100 m distance, (dB)	45
Rotor diameter, (m)	6.0
Weight, (kg)	650
Footprint area, (m <sup>2</sup> )	36
Lifetime, (years)	20
Standard	IEC 61400-2:2013 Small wind turbines
Operating temperatures, (C°)	-25 to +40
Survival wind speed, (m/s)	36
Tower height, (m)	18
Grid connection	AC load controller

## 9 kW Wind Turbine

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## Power Output

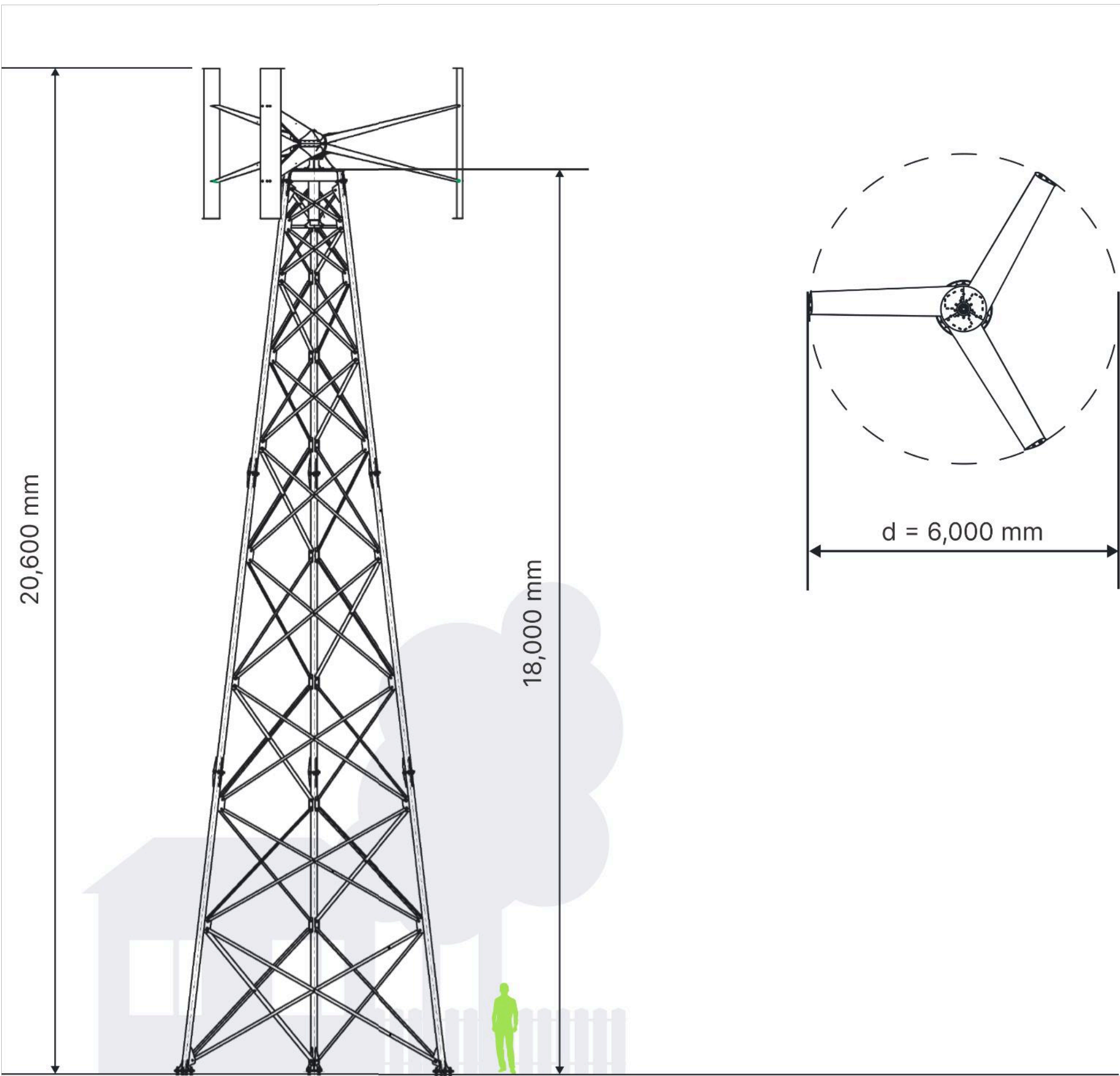


## Annual Energy Production (AEP)

Wind speed (m/s)	AEP (MWh)	Wind speed (m/s)	AEP (MWh)
4	2.8	11	32.5
5	6.6	12	33.0
6	12.1	13	32.7
7	18.1	14	31.8
8	23.7	15	30.6
9	28.1	16	29.3
10	31.0	17	27.8

! AEP is based on a Rayleigh wind speed distribution, K=2, t=15°C, P=1013 mbar, p=1.225

## Drawings



## Equipment Set

- ✓ Wind Turbine
- ✓ Controller\*
- ✓ Built-in monitoring
- ✓ Tower

\*We offer customized solution, including energy storage, per request

## Contact Us



! The product specifications are provisional and subject to change at any time due to improvements or other reasons.