

Freen-20: revolutionary 20kW vertical axis turbine to catalyze a global energy transition

Freen-20: 20kW VAWT revolutionizing clean energy with high efficiency, adaptability, and sustainability for urban, rural, and off-grid applications.

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/EINPresswire.com/ -- Freen OÜ, the Estonian Vertical Axis Wind Turbines manufacturer, is happy to introduce Freen-20, the 20kW compact VAWT for answering the needs of increasing efficiency, sustainability, and versatility in wind power solutions. Engineered to operate at optimal performance in

multiple conditions, Freen-20 represents an efficient and viable alternative for access to clean energy by communities, rural locations, and remote locations.



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The Freen-20 is what was missing in renewable energy to accelerate the global energy transition.”

Kate Samedova Sales & Marketing Executive

[The Freen-20 features the best-in-class energy conversion efficiency](#), smooth integration with on-grid and off-grid systems, and robust durability, thereby setting it as a game-changer in the small wind turbine market. Its design is unique, using resilient construction to maximize performance at low and turbulent wind conditions, thus opening new perspectives for wind power generation in locations not typically suited for traditional Horizontal Axis Wind Turbines (HAWTs).

Key Features of the Freen-20:

Rated Power: 20 kW

Operational Wind Speed: 3.5 m/s - 17.0 m/s

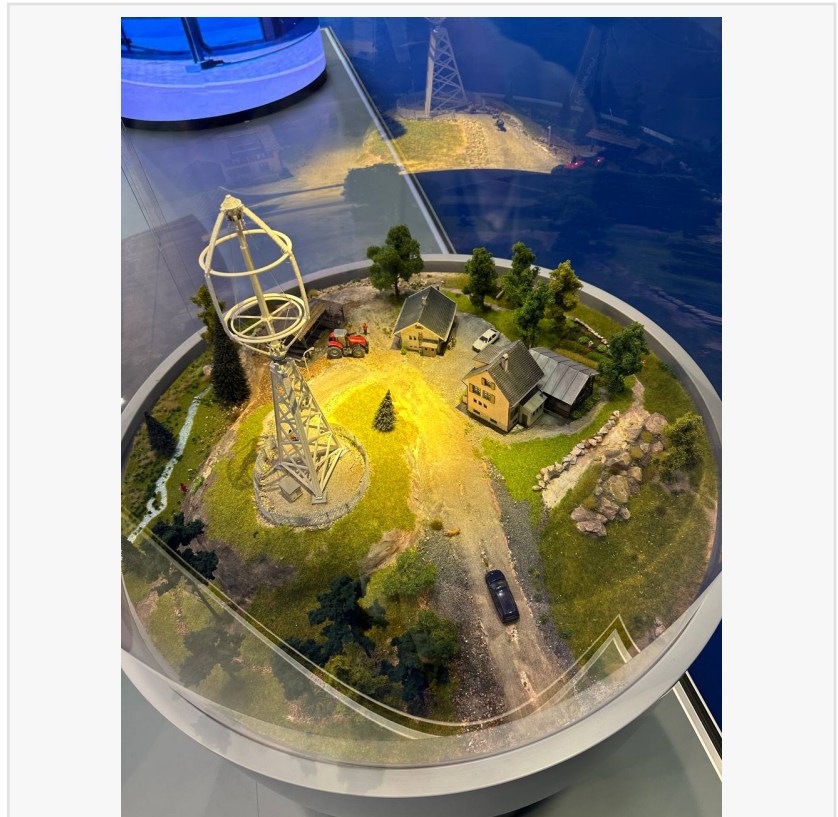
Turbine Height: 24.7 m - can be adjusted according to the customer's needs.

Life Span: 20 years

Sales & Marketing Executive Kate Samedova noted the position of Freen-20 in renewable energy: "The Freen-20 is what was missing in renewable energy to accelerate the global energy transition. With its low startup wind speed and being adaptable to both urban and remote settings, it's designed to empower everyone from landowners and energy cooperatives to manufacturing plants, EV charging stations or telecom operators with a reliable source of clean energy." This turbine allows for a completely new level of energy independence—enabling operators to reduce their dependence on fossil fuels and respond to overgrowing challenges in today's energetics.

Advantages of Freen-20

Freen has designed the Freen-20 with the significant needs of today's energy consumers in mind, such as energy efficiency, adaptability, and sustainability:



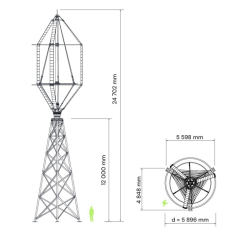
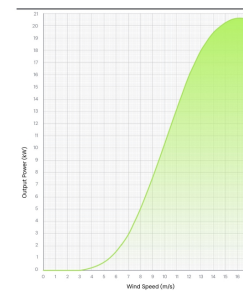
FREEN-20

Technical specification

Rated power, (kW)	20
Cut-in wind speed, (m/s)	3.5
Cut-out wind speed, (m/s)	17
Wind class	IEC III, IV
Swept area, (m ²)	52
Noise level 100m distance, (dB)	45
Height, (m)	24,7
Weight, (kg)	5000
Footprint area, (m ²)	35
Lifetime, (years)	20
Standard	IEC 61400-2:2013 - Small wind turbines
Operating temperatures, (C°)	-25 to +40
Survival wind speed, (m/s)	36
Remote monitoring	FREEN SCADA
Installation time	1-2 days

20 kW Wind Turbine

Power curve



Equipment set

- Wind Turbine with off-grid wiring*
- Inverter
- Controller
- FREEN SCADA
- Installation
- Tower**
- Foundation**
- Shipping

*Basic wiring connection directly to premises. We also offer on-grid wiring to sell excess of energy to network.

**We offer non-buried, prefabricated foundation, designed for installation on a flat, prepared surface (soil, asphalt, concrete, crushed stone). The density of the base for installation is at least 80 m³/m³. Customer can setup own foundation with specified parameters.

AEP

Wind speed (m/s)	AEP (kWh)	Wind speed (m/s)	AEP (kWh)
4	7,9	11	69,6
5	17,6	12	69,6
6	30,2	13	68,1
7	43,2	14	65,7
8	54,5	15	62,7
9	62,6	16	59,5
10	67,5	17	56,2

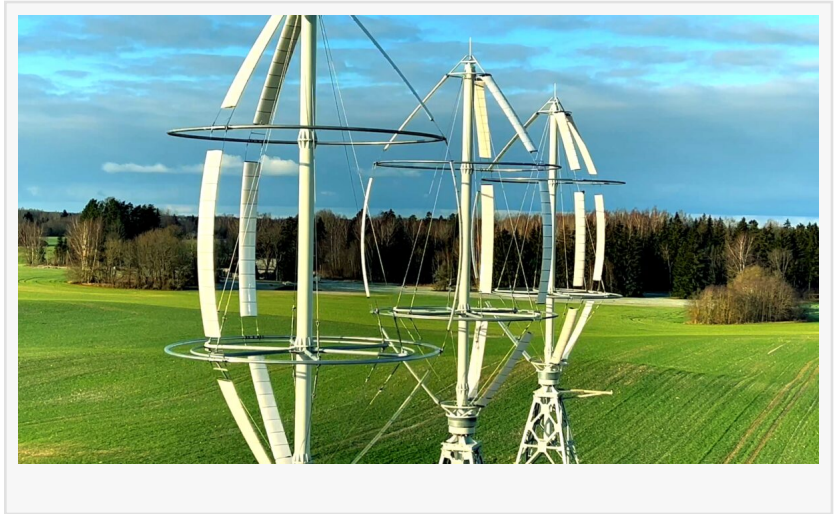
AEP is based on a Rayleigh wind speed distribution, P=2, V=10°C, P=0.53, P=0.53, P=0.53, P=0.53.

Technical specifications are preliminary and may be changed at any time based on improvements and other reasons.

Energy Efficiency: The Freen-20 maximizes power generation from lower wind speeds, making it ideal for regions featuring less consistent wind. It captures the energy efficiently arising out of diverse wind, reducing dependence on conventional fuels and hence promising more steady energy output.

Adaptability: Freen-20 is easily integrated with both grid-connected and stand-alone systems, hence making this turbine versatile for use at either rural or urban applications. Its design performs best in turbulent flows, bringing it into busy urban quarters and to isolated locations with no access to the grid.

Sustainability: The lifecycle of the Freen-20 will be 20 years with low-noise operation and wildlife-friendly in design to achieve zero impact on the environment. The recyclable components within it reinforce Freen's commitment to taking care of environmental concerns.



[Freen OÜ is offering reliable, clean energy systems](#) adapted to the

respective industries, like telecom

operators, rural villages, and small energy operators. Freen-20 is apt for landowners, farmers, and energy operators in generating their power supply or scaling up operations with sustainability. "The Freen-20 enables users to take charge of their energy needs, bringing renewable energy closer and more affordable. It is a solution designed to tear down barriers for communities and industries looking to harness wind power in a sustainable, flexible way" - Samedova added.

About Freen OÜ:

Freen OÜ is an Estonia-based manufacturer of Vertical-Axis Small Wind Turbines, committed to delivering affordable and reliable wind energy solutions globally. With EU-based manufacturing and compliance to strict quality standards, Freen combines engineering expertise and patented technology to offer dependable wind energy solutions for diverse needs. Freen's mission is rooted in providing sustainable energy solutions for communities. [Learn more about Freen.](#)

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