

nheowind 3D - innovation turbine

> COMPANY



NHEOLIS focus on designing and manufacturing innovative small wind turbines. After several years R&D in partnership with ONERA (the French Aerospace Lab), including tests in CNRS (French National Center for Scientific Research) wind tunnels, NHEOLIS revolutionized the energy world with its innovative, world-first 3D blade "Chistera" design. Applying fluid dynamics, Nheolis has made small wind turbine more efficient and reliable than ever before. In 2009, NHEOLIS received the Gold EEP Award of the European Environmental Press for its excellence in environmental innovation.

In 2010, NHEOLIS set up one joint-venture manufacture plant of SWT in China with Xiamen Kehua Hengsheng Co.,Ltd (the leading UPS power supply manufacture in China, public stock code: 002335). Benefiting from the strong co-operation between NHEOLIS 3D turbine technology and KEHUA advanced power supply solution, NHEOLIS is committed to leading innovation and reliability in the global renewable energy market.



Residential



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Your Certified Partner

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nheolis  
3D wind turbines

Enjoy nature power forever

2KW, 4.5KW, 8KW small wind turbines



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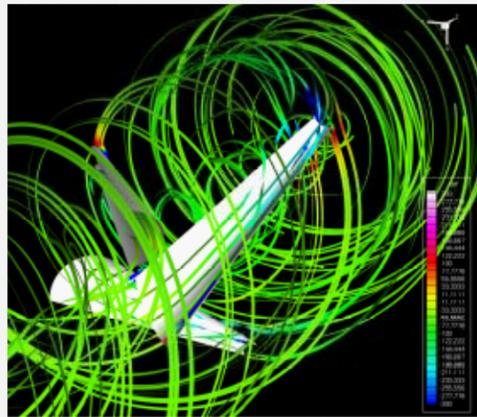
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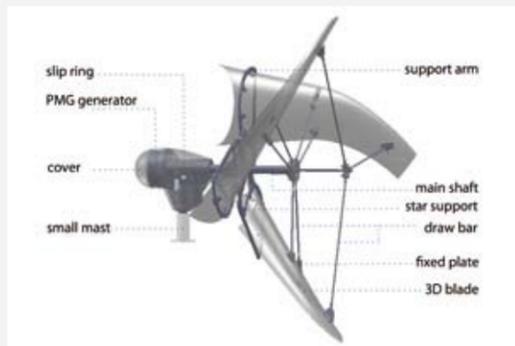
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> INNOVATION



NHEOLIS patented 3D blade technology is essentially capitalizing on the Bernoulli's Principle which governs the conservation of energy in fluid dynamics. The well known effect of pinching a hose-pipe leading to a fluid speed acceleration, is fully exploited and applied for the first time on a wind turbine structure. Semi conical shaped blades, properly designed and mounted with optimized deflection angles, lead to a much more efficient use of the air flow kinetic energy.

> DESCRIPTION & FEATURES



**-SILENCE:**  
The 3D blades (without wind shear) and low-RPM generator produce only 35dB at 12m/s wind speed.

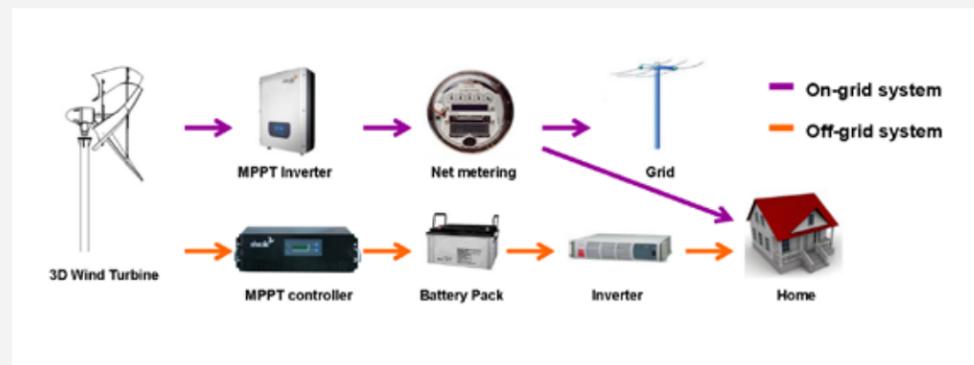
**-PERFORMANCE:**  
Cut-in at low wind speed (2.5m/s), and cut-out at high wind speed (35m/s); working with MPPT electrical control to generate more electricity than conventional SWT.

**-ROBUSTNESS:**  
The reinforced mechanism structure was designed and tested to withstand powerful gusts and turbulences through the rigging of its 3D blades; Marine grade components enable 3D turbines to be installed in the harshest environment with a projected 30 year lifespan.

**-Artistry:**  
The unique design of the 3D blades allows better landscape integration and greater visual acceptance; Rooftop mounted is available.

- ★ low rpm direct drive PMG, superior sealing, low noise, zero maintenance.
- ★ 316L stainless steel, high quality aluminium alloy, UV resistant e-coating enable the turbine body to withstand the harshest environment.

> SYSTEM OVERVIEW



> SPECIFICATION

	nheowind 3D 50	nheowind 3D 100	nheowind 3D 150
<b>General</b>			
Type:	Horizontal axis, downwind, 3 blades		
Rated power:	2KW @ 14m/s	4.5KW @ 15m/s	8KW @ 15m/s
Rated speed:	175 rpm	150 rpm	125 rpm
Weight:	185 kg	400 kg	700 kg
Orientation:	Self oriented / no rudder		
Cut-in wind speed:	2.5m/s	3m/s	
Cut-out wind speed:	30m/s	35m/s	
Survival wind speed:	50m/s		
Noise level:	<35dB @ 12m/s (at tower bottom)		
Operating conditions:	-40~60°C		
Brake:	mechanical and electric		
Warranty:	5 years(warranty extension possible)		
Design life:	30 years		
<b>Rotor</b>			
Rotor diameter:	2.8m	4m	6m
Swept area:	6.2m <sup>2</sup>	12.6m <sup>2</sup>	28.3m <sup>2</sup>
Blade length:	1.8m	2.7m	4m
Blade material:	Composite fiberglass (15 layers+ stuffed)		
<b>Generator</b>			
Type:	Permanent magnet, direct drive (no gearbox)		
Phase:	3 phase		
Voltage:	180V	200V	
<b>Electrical control</b>			
Grid-tied inverter:	MPPT, pure sine wave output, efficiency 96%		
Battery charger:	MPPT, for 48VDC battery pack		
<b>Tower</b>			
Type:	conical monopole, galvanized steel		
Height:	standard 11m (other height available), 4.5m for rooftop mounted		
Installation:	hydraulic tilt or crane lifting		

