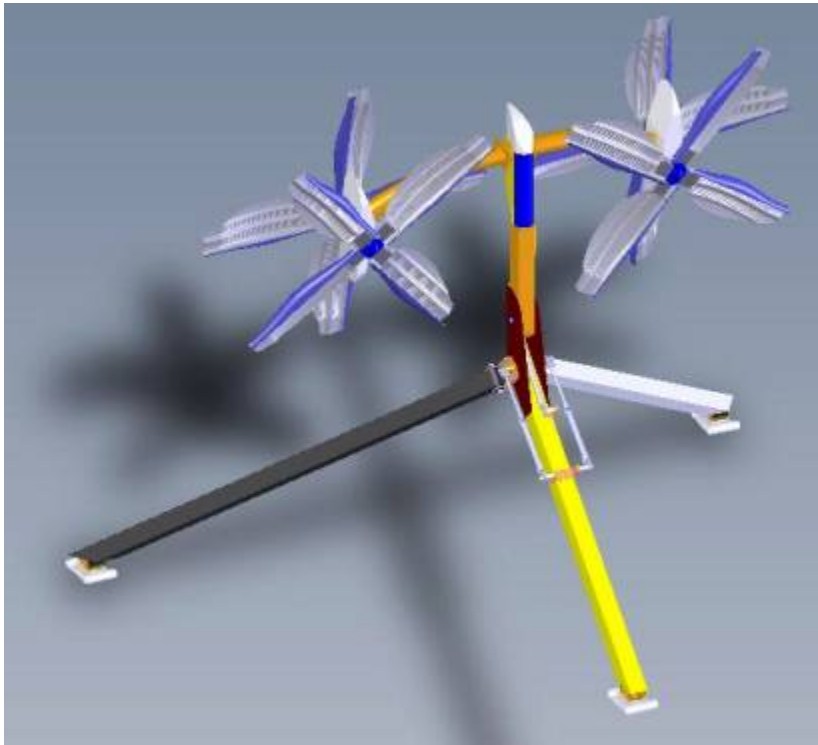


Press release from Johannes Hübner Fabrik elektr. Maschinen GmbH Gießen, Germany and

RSTech, Cape Town, South Africa

TransWind QuadRo “Inspired and Powered by Nature”

We are presenting the “Innovation of the Year” the “TransWind QuadRo” the latest, mobile or stationary, virtually self-erecting Wind Turbine that will usher in a new era of wind power generation.



Technology Innovation Description:

„**TransWind QuadRo**“ represents a highly novel, complete solution platform that is a: „**Trans**“formable, „**Trans**“portable – fully mobile „**Wind**“ Turbine with „**Quad**“ro „**Ro**“tor configuration. Initially, the Product range will be available with Power outputs between 1 – 50 kW. Production of these units, manufactured with our Cooperation Partner Stahlbau Ihnen (www.stahlbau.de), will commence in the first half of 2013.

The first Turbine to be produced will have an output capacity of 25kW. Power is produced by our newly developed DuRoGen (Patent Pending) 12.5kW Generator design, with dual counter-rotating rotors. These Generators are driven by two, upwind and downwind positioned counter-rotating Rotors. These Rotors are equipped with revolutionary high efficiency SuperVortexx blades. The blade design was conceived and developed through an optimised evolutionary process, based on examples from Nature. This has resulted in an extremely efficient Kinetic Energy conversion blade design, effective over the full range of wind speeds. The counter-rotating Rotor configuration provides a further benefit in that the gyroscopic effect inherent in conventional single Rotor configurations are neutralised. The pre-assembled, folded together Wind Turbine assisted by hydraulic and mechanical means is semi-automatically erected and fully operational in 1-2 hours utilising two operators. With our ground breaking development, a fully mobile, self contained power generation system has now been realised.



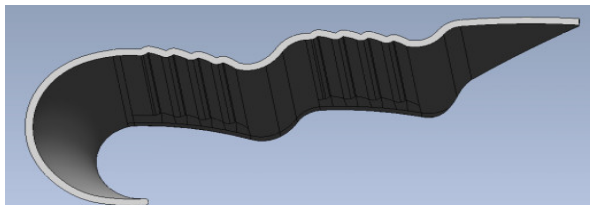
The mobile unit is transported similar to a log trailer to the required location. All off-grid components such as, charge controller, inverter and batteries are located in the trailer module. In addition, the tripod construction allows for Solar PV panels to be installed between the 2 front legs, enabling increased power output with a Hybrid solution



SuperVortexx Rotor blade

Our innovative technology concept is based around the unique SuperVortexx „Compression/Vortice generating“ Rotor blades, combined with upwind/downwind counter rotating Rotors. These key features differentiate the „TransWind QuadRo“ from conventional known solutions and will redefine the way kinetic energy is harnessed. The high level of innovation of the TransWind QuadRo development is illustrated by the 4 Patents currently pending.

Johannes Hübner/RSTech will be exhibiting 2 fully functional 1/5th scale Models, each with 1kW output at the Husum Wind Fair. This is based on the successful test results of the 3 kW twin Rotor version running in Cape Town, South Africa since May 2011 . The successful test results over a period of 18 months conclusively prove, that the development of the SuperVortexx „Air-flow compression/Vortice generation“ Blades/Rotors have a very low wind speed (<1.5m/sec.) effective start-up, when compared with similar output Turbines which do not operate at these low speeds.



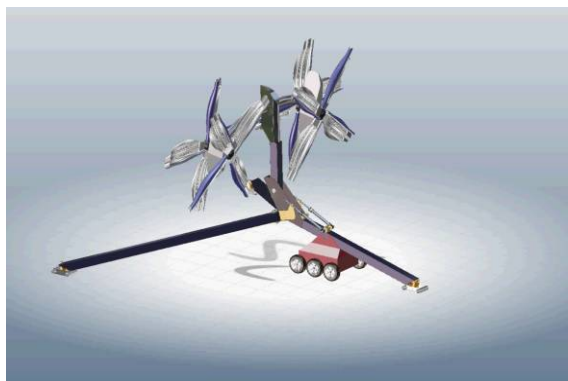
SuperVortexx Blade and conventional Blade profie

Advantages of the „TransWind QuadRo“ Technology in comparison to State of the Art:

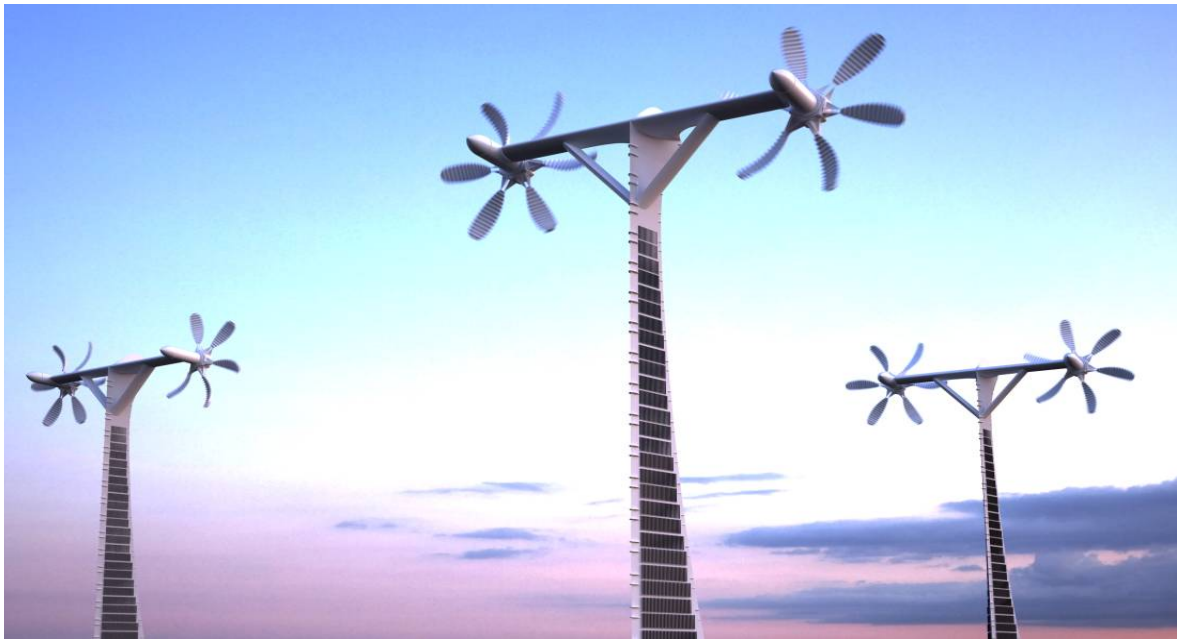
- folding Rotor system (no dismanteling of blades required) (**Patent pending**): allowing a complete factory assembly of the turbine
- innovative Blade design „SuperVortexx“ (**Patent angemeldet**) utilising observations and knowledge from Nature (Biomimicry): resulting in Blade surface Vortice generation /Air-flow compression with very high Rotor blade torque
- The rotor blade surface area can be up to 50 % relative to the Rotor swept area in comparison to conventional blades which have a blade surface area of 5 – 10%

this factor enables blades with significantly reduced blade lengths, which nevertheless, can harvest the optimum amount of kinetic energy available and achieve exceptional rotor torque

- Rotor blades run virtually noiseless across all wind speeds
- The „**QuadRo**“ Wind turbine is configured with 4 counter rotating rotors : **2 up-wind** and **2 down-wind (Patent pending)**
- Rotors can be configured with 6- or 8-Blade Dual-Rotors for low wind speed regimes (**Patentvariante**)
- very low start-up speeds < 1.5m/sec
- passive Rotor tilt-furling system (**Patent pending**), allowing for continuous operation (no cut-out speed) regardless of wind conditions. Power is still produced under conditions where conventional turbines are shut down
- passive Rotor steering with all wind speeds: this ensures that the total machine is not stressed
- Rotor blades are not sensitive to airflow turbulence and allow for lower mast heights
- Substantially lower costs per kW output with „**QuadRo**“ Rotor configuration and DuRoGen Generators resulting in an increased output of 50-60% for the same size turbine
- mobile construction, no foundations required, turbine is fixed into position with earth anchors
- the complete mobile TransWind unit is factory assembled and delivered ready for operation



- System is also suitable for stationary applications
 - the „**QuadRo**“ Technology and „**SuperVortexx**“ Rotors are scalable for MW turbines both for On-Shore and Off-Shore applications
 - for the first time SuperVortexx Rotor blades, can be universally utilised for both Horizontal and Vertical axis turbines
 - hybrid combinations with integrated Solar PV and Fuel cells are also possible
- kW Turbines are suitable for operation in urban areas



TransWind system in a stationary application

Ecological and benefits benefits

- the „**QuadRo**“ Development ensures optimal area utilisation per kW output
- neue revolutionäre Technologie, welche auch als hybride Solar PV Anlage ausgeführt werden kann
- Beitrag den Anteil der erneuerbaren Energien zu erhöhen
- suitable for power generation as well as for Water treatment/pumping or
- rapid deployment in Crisis or disaster regions- oder Katastrophengebieten
- smaller overall construction with substantial material and cost savings in comparison with same output conventional turbines
- universal concept für Private, companies and public application areas

Economic benefits and Market potential

- 50% lower Material usage for the Rotor blade manufacturing
- 30% - 40% overall construction cost reduction in comparison with conventional turbines
- substantially higher and more constant energy output per annum
- owing to the wide range of operational areas and applications of the technology, a significant national and international Market potential can be realised with the mobile system: Agriculture, Disaster-Crisis areas, Emergency power, Irrigation, Desalination, Water treatment, large Construction sites, Pipeline construction, Harbour applications, Decontamination requirements and many more