



Category: Renewable energy.

Sub category: Wind Turbine.

Company profile

The company develops an efficient, cost-effective vertical axis wind turbine (VAWT) with first focus on small wind turbines for residential settings.

Year of establishment: 2008

No. of employees: 2

Background of the company

Smart Wind was established by Andrey Kotler in the L.N. Green Technological Incubator in Haifa, Israel. The key differentiator of the company is a novel rotor with a specific use of Active Flow Control (AFC) aerodynamic technology which enhances the turbine's efficiency, reduces noise and vibrations and enables high performance in unstable wind conditions and across a range of wind speeds. The first focus of the company is the wind turbine market for residential settings (rated capacities up to 10 kilowatts). Following penetration into the residential market the company will approach other sectors in the small wind turbine market (rated capacities up to 100 kilowatts) and explore the opportunities for applying its innovative technology to larger VAWT (rated capacities above 100 kilowatts).

Examples of projects

Smart Wind created five test model configurations which were evaluated at the company's test site at the Technion - Israel Institute of Technology. The different configurations were tested against two conventional small wind turbines; one with a horizontal axis of rotation (HAWT) and the other is a VAWT (Savonius type wind turbine). Comparison experiments between the Company's fifth configuration and the conventional small wind turbines demonstrated that the company's test model produced more energy per rotor swept area in almost complete silence.

Technologies & products

General description:

The basic idea of the Company's Active Flow Control technology, by Andrey Kotler, for vertical axis wind turbines is to use the centrifugal forces, due to the spin of the rotor, to inject accelerated air on the rotor blades. Injection of accelerated air on the rotor blades increases the air circulation around the blades. The increase in air circulation around the blades translates to greater power production of the wind turbine. Smart Wind turbine is comprised of its innovative and special rotor, generator, electrical components and tower.

Function of the product(s):

The increased efficiency of the company wind turbine – for greater electricity production - will translate into a relatively rapid ROI.

Objectives / Target companies

The company is seeking to raise 2M\$ to enter the international market with the first commercial model and to expand to wind turbines with higher powers. Smart Wind's strategic partner is Kanfit Ltd – a privately owned company which is a certified supplier of products for the international aviation market. Now the company is in the process to manufacture and test the first commercial model of about 1kW