Chapter 8

 MOST EFFICIENT TECHNOLOGY

8.1 Characteristics of a highly efficient propeller type

small wind turbine with a diffuser :

We evaluated a wind turbine fitted with a diffuser with the aim of improving the Turbine’s output power characteristics. We used thermo hydrodynamic analysis software to simulate the effect of the diffuser parameters on the wind speed, and evaluated the turbine

8.2 Simulation results



MOST EFFICIENT TECHNOLOGY

8.3 WindTamer:

Patented WindTamer technology produces more than

double the power of traditional wind turbines for a faster

return on investment.

WindTamer turbines use a patented diffuser system to

separate the wind into three cooperative forces. First, the

wind pushes the blades to start rotating. Then, the diffuser

system separates the air, creating two vacuums — one

behind the blades and another behind the turbine. The

vacuums pull the air through, turning the rotors faster and

generating more power — more than double the energy

of conventional turbines.

Traditional three-blade turbines need to furl in high winds to avoid damage to the long blades.

 The shorter blades on WindTamer turbines aren’t damaged in high winds.

 In fact, the diffuser system augments the high winds, resulting in higher energy production for a faster return on investment.

8.3.1 Clean energy with fewer concerns

Most people can agree on the benefits of clean energy.

It’s not only good for the environment, it also reduces energy

costs. Plus, government incentives make the initial investment more affordable. Wind power often faces opposition, however, because of several issues including danger to birds, noise and appearance. WindTamer turbines

answer all these.

8.3.2 Silent and vibration free

The high tip speed and vibration of conventional turbine blades cause a hum that has caused complaints in many communities. WindTamer turbines operate quietly and without vibration. The largest WindTamer turbine rotating at high speeds is about as loud as a refrigerator.

8.3.3 Safe for birds — and people

On traditional three-blade turbines, when the wind speed is only about 15 miles per hour, their blade tips travel at a speed of over 200 miles per hour. Thousands

of birds have been killed when they fly in the path of those spinning blades. Because the blades of WindTamer turbines are housed, birds do not fly in their path.

Conventional turbines also can pose dangers to people.

In high winds, their blades can disintegrate or detach

from the rotor and be thrown a long distance. In addition,

ice can form on the blades and be thrown off. Because

the WindTamer rotors are housed, these situations are

not an issue

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8.3.4 MINIMAL MAINTENANCE

WindTamer turbines require little routine maintenance and have few

moving parts. Plus, key components are housed, protecting them from the elements and U/V rays.

8.3.5 EASY ACCESS

Service and repairs are much simpler on WindTamer turbines than larger

turbines. Because the turbines are closer to the ground, they do not require cranes to access the rotors.