



CLEANTECH RADAR SCREEN

JULY 6, 2011

MARKET DATA

Recent Price as of 7/06/11: C\$0.065

52-week Range: \$0.04 - \$0.215

Shares Outstanding: 43.5MM

Market Capitalization: \$ 2.83MM

Closely Held Ownership: 36%

Fiscal Year-end: May 31

Management

Tony Verrelli President & CEO
Henry Kroeze CFO & VP
Mihail Stern CTO

Board of Directors

Tony Verrelli Director
Mihail Stern Director
Brian Miloski Director
Sureshlal Kamalalal Shrivastav Director
Khris Kline Director

ANALYST

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Cleanfield Alternative Energy Inc. - a Wind and Solar Company (TSX-V: AIR) - Not Rated

Sector: Utilities Industry: Diversified Utilities

SUMMARY

Sustainable Capital has added Cleanfield Alternative Energy Inc. to the Cleantech Radar Screen. The Radar Screen report showcases names not yet under coverage but are believed to be of interest to investors.

Cleanfield Alternative Energy (AIR) is focused on the research, development and distribution of renewable energy solutions for the urban environment. AIR has had successful installations of its flagship product 3kW vertical axis wind turbine (VAWT) with its proprietary inverter technologies and software package. 3kW VAWTs have been installed for commercial, industrial, institutional and agricultural customers in North America, Europe and Asia.

In June, 2011, AIR's major Indian strategic partner and shareholder Sai Prasad Energy ("SAI") officially opened its new renewable energy manufacturing facility in Pune, India. The facility will have the capacity to annually manufacture 1,200 units of AIR's 5.1kW off-grid hybrid system comprising of a 3.5KW vertical axis wind turbine and a 1.6KW solar system. Sai will be installing 13 off-grid hybrid systems over the next several months at petroleum stations, commercial facilities, and hotels. Tony Verrelli has been the President and a Director of Cleanfield since 2002 and has been involved in the renewable energy industry for the past ten years and the environmental industry since 1995. AIR is based out of Ancaster, Ontario, Canada.



INVESTMENT OPPORTUNITY

- AIR is in the desirable, high growth renewable energy technology space. Rise and volatility in prices of fossil fuels and issues with nuclear energy drive consumers and government to seek alternative means of generating electricity.
- The company's wind and solar products are designed for the 'small urban wind' market in both developed areas (North America, Europe) as well as emerging areas (China, India). Unlike large scale wind farms in remote locations, AIR's small wind turbines can be mounted on building roof-tops to generate electricity to directly meet the energy need of the building.
- AIR has recently shipped its 5.1kW off-grid hybrid system (3.kW VAWT and a 1.6kW solar system) to Sai Prasad Energy of India (SAI) for on-site testing, manufacturing and sale. By shipping the prototype system, SAI will make a total \$1 million equity investment over the next 3 quarters. SAI has already invested \$1 million in AIR, and will pay AIR a quarterly royalty fee for all hybrid units sold by SAI.
- This partnership with SAI has granted AIR access to the fast growing Indian market.
- SAI will be installing 13 off-grid hybrid systems over the next several months at petroleum stations, commercial facilities, and hotels.

PRODUCTS AND SERVICES

Wind Products

Wind Turbine

Cleanfield's flagship product is the V3 Vertical Axis Wind Turbine (VAWT). VAWT has three major components (turbine, generator and inverter). The vertical axis turbine is different from the visually familiar horizontal axis turbine (HWAT) in that the vertical axis turbine's main rotor shaft is set vertically (See figure 1). An advantage of the VAWT is that it works well with omni-directional, turbulent and veering wind that is prevalent in urban and suburban areas where as the HWAT must be pointed into the wind.

Key features of the V3 VAWT

- V3 can generate up to 3.5kW of clean energy
- 3kW (3,000 Watt) generator
- Produces up to 9,000kWh annually
- 10 ft high; 9 ft wide; 900 pounds
- Long life expectancy (25 years)
- Grid-tie and off-grid capability
- Effectively captures turbulent wind from all direction
- Can be rooftop or ground mountable

Generator

The generator is a direct drive, low speed, permanent magnet generator (PMG) with an external rotor. Designed and built to match the turbine parameters (nominal rotational speed, nominal torque, assembly requirements etc.) The fail-safe electro-mechanical brake with status feedback is included in the generator (energized in order to be released) and will engage in case of power loss. The emergency braking mechanism manages turbine speed and locks down the turbine when wind speeds are excessive.

Inverter Electronics

The inverter has been designed with a custom algorithm for permanent magnet generator control. Cleanfield's proprietary wind inverter is well tested, certified and proven for commercial applications, the company is modifying it to accommodate the requirements of solar panels and collaborating with solar technology.

Offsite Monitoring Service

Cleanfield offers Offsite monitoring via Ethernet internet connection for preventative maintenance and monitoring power productivity for customers.

Solar Products

Solar System

Cleanfield is designing and marketing photovoltaic systems up to 250 kW for commercial and industrial customers in collaboration with a multitude of established solar energy product suppliers and expert technical consultants. The company is also marketing a 5.1 kW off grid solar/wind hybrid system comprising of a 3.5kW vertical axis wind turbine and a 1.6kW solar system.

RISKS

- AIR has successfully commercialized and generated revenue from its wind products but remains significantly in the research and development stage and hence not yet profitable. It is uncertain when the company will be profitable
- The success of small winds companies is largely dependent on management capability, technological development and also, very importantly, sales and marketing.
- The demand for renewable energy products is largely dependent on favorable government policies (subsidies, grants) as it requires higher initial capital investment.
- The demand for renewable energy products is subject to fluctuation in fuel prices.

Figure 1. V3 Vertical Axis Wind Turbine



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