# AMP Quick Facts

**Alternative Energy** 

ForceField Energy Inc. (OTC.QB: FNRG)



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Symbol OTC.QB: FNRG

Last Price: \$5.24 (August 07, 2013)

Sector: Energy

Industry:

**Alternative Energy** 

52 Week Range:

Low \$3.10 High \$5.64

Market-Cap: \$86.1 M

**Shares: O/S 16.2 M** 

Employees: 42 Shareholders: 608

(4/2013)

Companies Websites www.forcefieldenergy.com

www.transpacenergy.com

www.lightsky-led.com

Executive Officers
Board of Directors

Richard St. Julien,

<u>Chairman</u>

David Natan,

<u>CEO, Director</u> Jason Williams

<u>CFO</u>

**Independent Directors** 

Adrian Auman Kebir Ratnani David Vanderhorst ForceField Energy Inc. is a fully reporting public company (OTC.QB: "FNRG," in the final stage of listing on the NASDAQ). The Company is an international manufacturer, distributor, and licensee of alternative energy products and solutions. The Company has a majority interest in a proprietary and cutting edge thermal heat-to-electricity conversion technology, has an LED commercial lighting distributorship with a leading LED manufacturer holding a number of patents, and FNRG manufactures and distributes a key compound used in the production of polysilicon used to manufacture 75% of solar panels used in the world today.

### **Renewable Energy Market Segment**

TPE is a high-tech corporation that designs, builds, installs and operates a proprietary modular Organic Rankine Cycle ("ORC") technology that uses special refrigerant mixtures to maximize heat recovery for conversion of waste heat from industrial processes into electrical energy. TPE technology can be utilized as an alternative for cooling towers and steam condensers that use industrial heat to efficiently generate electricity. TPE uses multi-component proprietary fluids that are non-toxic and non-flammable, in contrast to the typical ORC installations that use binary cycles and petroleum-based fluids or ammonia which is flammable and toxic to the environment.

#### TPE Technology and Economics

- There are existing technologies that take "waste heat" from an industrial smokestack and convert it
  into clean electricity at lower prices than from the electrical grid. This process is called the Organic
  Rankine Cycle and is a proven technology. ORC uses a turbine steam generator in a closed loop system to convert heat into electricity.
- TPE's technology works at temperatures up to 950° Fahrenheit, whereas the competition caps out at 550° Fahrenheit. Eighty percent of the potential ORC applications are above 550° Fahrenheit, so TPE has a huge potential market.
- TPE has nine proprietary refrigerants for an ORC turbine system and these refrigerants are water-based and non-toxic.
- This technology qualifies for a 30% government renewable energy grant of the cost of the equipment in certain applications

#### Renewable Energy Market Opportunity

According to IEA electricity demand is expected to double by 2030 and by then \$11 trillion is expected to be spent on energy infrastructure. Renewable energy is expected to be a \$500 billion component by 2017.

TPE is truly unique in that TPE's proprietary technologies using ORC can access the entire market, whereas its competition has less than 5% share of the market due to temperature application constraints.

TPE's proprietary systems in certain applications reduces operating and maintenance costs and significantly improves return on capital expenditures, thus making the purchase of waste heat recovery systems that previously yielded nominal savings, economically viable. In turn, potentially opening enormous new markets.

#### LED Market Segment – Lightsky

In late 2012, ForceField acquired the exclusive distribution rights for the US, Canada, and Mexico high performance light emitting diode "LED" lighting fixtures used in a wide array of applications for a period of five years. ForceField is the exclusive distributor in the U.S., Canada, Mexico, Latin America, and the Caribbean of Light Emitting Diode ("LED") commercial lighting products and fixtures for a premier LED manufacturer, Lightsky. FNRG, has identified and is evaluating significant LED bid proposals and is involved in trials in Europe, Latin America, and the United States. As a result, the Company has created a strong backlog of opportunities and has submitted bid proposals and executed signed agreements or initiated pilot programs representing more than \$100 million in potential revenue. An LED is a semiconductor device which converts electricity into light. The LED light is considered "green" because of the absence of dangerous chemicals and an accompanying significant reduction in energy consumption depending on the application, from 50% to 70% of traditional lighting products.



August 2013-FNRG Pro-

vides Business Update on

Its LED Operating Segment

July 2013-FNRG to Com-

Lightsky is a leading high-tech enterprise which was established by Shanghai Academy of Science and Technology (SAST) and Shanghai Zhongbo Capital Co., Ltd. Lightsky researches, designs, and manufactures LED lighting to meet the worlds constantly changing lighting needs. Lightsky supplies the product range from illumination LED lighting, LED video display system, and architectural LED lighting. Also, Lightsky has completed some major lighting projects such as: Shanghai International Airport lighting project, 2010 Shanghai World Expo, and Hong Kong University. Lightsky holds a series of design and utility patents, certificates including: ISO9001, CE, Rohs, and other qualifications in the United States.

# Lightsky Technology

Recent advances in the performance of LEDs have made LED lighting commercially feasible. Lumens per watt from an LED have increased to over 140 lumens from 55 lumens just a few years ago, making LED lighting an economically attractive alternative to conventional lighting. SunSi will offer an array of commercial LED products for warehouses, canopies, parking garages, exterior building facades, parking lots, along with office space replacements for fluorescent fixtures, All of which show very attractive potential levels of payback and return on investment. Lightsky LED products perform at the highest level surpassing traditional lighting in performance while offering energy efficiency savings of 50-70%.

### **Distribution of Lighting by Fixture & Property Type**

LED lighting is about to branch from color and niche lighting corners to widespread penetration of the white lighting market in the most prevalent applications. According to a DOE Study, there are over 7 billion lamps of varying types in US buildings.

The total dollar value of replacing every Commercial and Industrial Fluorescent and HID lamp could approach \$600 billion. Lightsky will produce replacements for commonly used commercial fixtures that will meet or exceed the rated life of LED lighting. Furthermore, the Lightsky product will stand out by utility, quality, and features that are not yet available in the marketplace. Such features include: dimming capability, control functions, and light color.

#### **Key Strategic Business and Marketing Objectives**

Focus on High ROI products with widest use in the Commercial, Industrial, and Institutional sectors. Target customers where economics carry the day and where utility costs and incentives may be the highest such as corporations, hospitals, and institutions where lighting and a good "green image" are important. Focus attention on larger customers who can undertake an ongoing LED roll-out over many years with large and continuous volumes.

#### TCS Manufacturing Segment and Distribution Business

In 2010, ForceField completed the acquisition of 90% of Zibo Baokai Commerce and Trade Co., Ltd. a company located in Zibo City, China which owns the right to globally distribute all of the TCS production of Zibo Baoyun Chemical Plant. As a result, Sunsi began generating revenues in December 2010.

# **Key Drivers of Future TCS Business**

- •China is the world's low cost producer of TCS –during a consolidation the low cost producer will gain the majority of market share.
- Excellent management teams with many years of running TCS facilities.
- •The Chinese government announced in 2010 that they intend to spend \$454 billion over the next ten years on alternative energy, and will take affect a Fivefold increase in Chinese solar production by 2020. This commitment is still in place and will require production of TCS to fulfill this goal.

#### **Synergistic Products**

•In 2013 we entered into cross-distribution agreement whereby each company will represent and sell each other's energy efficiency products and solutions in United States, Canada, Mexico, and Latin America. PowerOneData will initially focus on distributing the LED products and solutions in conjunc-

tion with its Automated Street Light Management (ASLM) systems, and ForceField will focus on the distribution of the PowerOneData's smart meters and advanced Database Management Software and other related products and software.











Distribution Agreement

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