SpiralAirfoil

Franklin Pierce University
Small Business Advisory Group
2010 - 2011
Phase I Team Members
Fall 2010

Chair: Mike Parthum
Alternate Chair: Joe Lacava
Secretary: Samantha Cooper
Alternate Secretary: Derek Suess
Competitive Analysis Committee: Derek Suess, Kevin Gledhill, Nick Hamel
Attribute and Distribution Committee: Kinard Dozier, Shaliek Dawkins, Joe Lacava
Business Plan Committee: Anna Hoppe, Samantha Cooper, Jeff Murphy, Mike Parthum
• Phase II Team Members
  Spring 2011

  **Chair**: Anna Hoppe
  **Alternate Chair**: Mary Holland
  **Secretary**: Kim Faiella
  **Alternate Secretary**: Ally Harper
  **Website Committee**: Daniel Brennan, Michael Pelletier, Kim Faiella, Ally Harper
  **Media Plan**: Kim Faiella, Ally Harper
  **Brochure Committee**: Kayla Johnson, Mary Holland
  **Social Networking Committee**: Michael Pelletier
  **Business Plan & Financials**: Bryan Williams
• SpiralAirfoil
  • Meet our client
Spiral Airfoil

- Dan Parker - Inventor
- Dennis Noonan
SpiralAirfoil

History

- SpiralAirfoil started in 2006 to develop wind turbine that addresses the shortcomings of current designs in the response to:
  - Noise
  - Size
  - Inefficiency at low speeds
  - Bird safety
  - Affordable Prices
• **SpiralAirfoil**
  How it Started

  • In 2007 Dan met with Dennis Noonan of Blanchard Machine to discuss the opportunities with his wind turbine design.
  • In 2008, a U.S. patent and World patent were filed.
  • In 2010, a China and India patent was filed.
SMALL BUSINESS ADVISORY GROUP

Working with SpiralAirfoil
• Goals
  Fall 2010 – Spring 2011

Phase I

• General revision of the business plan
• Develop Mission Statement
• Competitive analysis including market share and how SpiralAirfoil differentiates itself
• Determine market size, growth rate, and needs
• Identify key facts about:
  • The product
  • Key promises made by the business
• Reasons why customers and distributors should buy
• Identify distribution strategies
• Goals
  Fall 2010 – Spring 2011

Phase II

- Design a brochure to help advertise to local businesses and distributors
- Design a company logo
- Develop social network marketing such as Facebook
- Review and develop website
- Develop a media schedule, plan, and evaluation plan
• Mission Statement:
  To provide customers and distributors with the most efficient wind energy systems.

• Purpose Statement:
  To design unique, cost efficient wind turbines that produce energy at low wind speeds.

• Vision Statement:
  To expand throughout the United States by manufacturing efficient wind turbines at a reasonable cost.
• Business Plan

  • Business Description
    • SpiralAirfoil is a company built on saving the environment
    • SpiralAirfoil turbines are able to produce a greater amount of
electrical power than current turbines of the same diameter.

  • Target Market
    • someone who is environmentally cautious and interested in
    sustainable forms of energy

  • Prices
    • six foot unit $9,600
    • ten foot unit $15,000
• Business Plan

• Financing for the Future
  • Debt Financing
    • Interest bearing
    • short term solution
    • enables the company to avoid additional ownership
  • Equity Financing
    • Selling stock, issuing bonds, retaining earnings
    • Angel investments, venture capitalism, financing partners, general funding
    • Provides the company with a larger pool of capital
    • Dilutes the original owner’s interest and could lose control
    • Decisions are made in the best interest of shareholders
Business Plan

- Gaining Notoriety and Exposure
  - Proper implementation of businesses core competences and mission/vision statements
  - Build brand equity

- Marketing Plan
  - Fliers, brochures, public demonstrations, commercials and advertisements
  - Company values and social responsibility should be emphasized
• Business Plan

  • Growth and Expansion
    • Industry expects rapid growth in demand
    • Spiralairfoil will need to expand in order to match growing demand

  • Capital purchases and investment activities
    • Property, plant assets and equipment
      • Machinery and equipment
      • Warehouses and factories
    • Expedite output, increase asset turnover and liquidity and maximize profitability and customer satisfaction.
• **Industry Analysis**

  - Although efforts to develop alternative sources of energy is high, oil consumption is still steadily rising as well.
  - Other sources of energy will ease power problems where these resources are most readily available.
  - However, there is not enough alternative energy sources to power the whole world for any extended period of time.
Industry Opportunities

- Even though oil consumption is still rising, there is hope for renewable energy: price of oil.
- Gas prices are rising and they are expected to continue rising.
- Additionally, with the crisis in Japan, Nuclear Energy is being more frowned upon.
• Industry Threats

• Wind is more expensive to produce than oil.
• Oil is unlimited (as of now) and can power many parts of the world for an extended period of time, opposed to wind which is not guaranteed past the foreseeable future.
• Competitive Analysis

• A Sampling of Competition
  • Companies interested in the sale and distribution of Wind Turbines at a consumer level
    • Urban Green Energy
    • Bergey Wind Power
    • A&C Energy Inc.
    • Hummer Wind Power
    • Xzeres Wind
    • Southwest Windpower
• Competitive Analysis

Market and Competitive Advantages

• Industry is essentially embryonic and free of any conglomerate brands
• Consumer interest in sustainable forms of energy is on the rise
• Steady growth in the alternative energy market is being noticed
• Concrete Business strategy
• Manufacture and sell cost efficient wind turbines at a consumer level
• SpiralAirfoil Wind Turbines is differentiated from the competition as being small, affordable, reliable and easy to use.
• Strong product design that is unique and innovative.
Competitor Profile

Urban Green Energy

- Based out of New York
- Year Founded: 2008
- CEO: Nick Blitterswyk
- Employees: 10
• Competitive Analysis

Urban Green Energy (2)

• World leader in small wind energy, focused on providing high quality, high performance, and attractive products to customers around the world.

• UGE's products include vertical axis wind turbines and hybrid street lamps, both of which use state of the art technology to meet the standards of safety, reliability, and elegance our customers expect.

• UGE takes pride in partnering with best in class companies providing innovative solutions to today's energy needs.

• To date have sold wind turbines to more than 35 countries world wide.
Competitive Analysis
Urban Green Energy’s Main Design

- **VAWT (Vertical Axis Wind Turbine)**
  - Not affected by the direction of the wind which is useful in areas where the wind changes direction frequently or quickly. Unlike traditional horizontal axis wind turbines, no mechanism is needed to turn the wind turbine towards the wind.

  - Better able to harvest turbulent air flow found around buildings and other obstacles; situations more common in areas where people live.
  - Ideal for both rural and urban applications including roof top installations.
  - Simple to install and maintain
  - Quiet operation
  - Pleasant appearance
Competitive Analysis

Bergey Wind Power

- Based out of Oklahoma
- Year Founded: 1977
- CEO: Karl Bergey
- Employees: 30
• **Competitive Analysis**

  Bergey Wind Power (3)

  • Product is established, reputable and even sold at Lowe’s energy center.
  • Designs have won multiple awards and Turbines have been featured in multiple publications.
  • Have installed turbines in all 50 states and more than 100 countries.
• Competitive Analysis

Bergey Wind Power

Featured Products

• 1 Kw Model- Bergey XL.1 (3 Blade Upwind)
  • Unit Cost: $5,800
  • Start-Up Speed: 6.7 mph
  • Cut-in Speed: 5.6 mph
  • Rated Wind Speed: 24.6 mph
  • Max. Power: 1,300 Watts

• 10 Kw Model- Bergey Excel (3 Blade Upwind)
  • Unit Cost: $26,500
  • Start-Up Speed: 7.5 mph
  • Cut-in Speed: 9 mph
  • Rated Wind Speed: 27 mph
  • Max. Power: 10,000 Watts
• Competitor Profile
  A&C Green Energy, Inc. (4)

A&C Green Energy
• Based out of Texas
• Year Founded: 1999
• President: Jeff Lee
• Employees: 9
• **Competitive Analysis**
  A&C Green Energy, Inc. (4)

- Initially provided replacement parts and components to various manufacturers of Wind turbines.
- Specializes in manufacturing, integrating and marketing small wind systems from 2,000 to 30,000 watts.
- Manufactures both upwind and downwind models of wind turbines.
- Wind turbines are intended for use by farmers, home owners and small-business owners.
- Focus on providing their customer with the most efficient Wind Turbines possible. Because of this, products tend to be exorbitant.
• **Competitive Analysis**

A&C Green Energy, Inc. (4)

- Featured Products
  - Talon Series-2Kw
    - Unit Cost: $16,745
    - Start-Up Speed: 5.6 mph
    - Rated Wind Speed: 20 mph
    - Max. Power: 2400 Watts
    - RPM: 360
  - Talon Series-5Kw
    - Unit Cost: $26,200
    - Start-Up Speed: 6.7 mph
    - Rated Wind Speed: 24.6 mph
    - Max. Power: 5400 Watts
    - RPM: 240
• Competitive Analysis
A&C Green Energy, Inc. (4)

- Talon Series-10Kw
  - Unit Cost: $54,445
  - Start-Up Speed: 6.7 mph
  - Rated Wind Speed: 24.6 mph
  - Max. Power: 12,500 Watts
  - RPM: 200
- Talon Series-30Kw
  - Unit Cost: $54,445
  - Start-Up Speed: 6.7 mph
  - Rated Wind Speed: 23.3 mph
  - Max. Power: 32,000 Watts
  - RPM: 200
Located in Fort Wayne, Indiana
Provides small wind power turbine solutions that are low noise, low-maintenance, direct drive, grid-tied capable with patented in-the-hub power generation technology.
5 Year Limited Warranty.
• Competitive Analysis
  Hummer Wind Power (5)
  • Featured Products
  • Hummer 5kW
    • Rated Power: 5,000 Watts
    • Maximum Output: 7,500 Watts
    • Number of Blades: 3
    • Start-up Wind Speed: 5.6 mph
    • RPM: 240
  • Hummer 10kW
    • Rated Power: 10,000 Watts
    • Maximum Output: 15,000 Watts
    • Number of Blades: 3
    • Start-up Wind Speed: 6.7 mph
    • RPM: 200
    • Noise: (5m behind turbine @ 5m/s gusting)- 34 dB
• Competitive Analysis
  Xzeres Wind (6)

• Manufactures and markets distributed generation, wind power systems for the small wind (2.5kW-100kW) market.

• 20+ year life expectancy.
• Competitive Analysis
  Xzeres Wind (6)

• Featured Products
  • Model Xzeres 110
  • Rotor Diameter: 3.6m (11.8ft)
  • Peak Power: 2.5kW
  • Cut-in Speed: 5mph
  • Blades: 3 Blade, upwind
  • Monthly Output (estimated): 419kQh @ 12mph

• Model Xzeres 442SR
  • Rotor Diameter: 7.2 m (23.6 ft)
  • Peak Power: 12 kW @ 30 mph (14 m/s)
  • Rated Power: 10 kW @ 25 mph (11 m/s)
  • Cut-in Speed: 5 mph (2.2 m/s)
  • Monthly Output (estimated): 1,583 kWh @ 12 mph
## Competitive Matrix

<table>
<thead>
<tr>
<th>Company/ Model</th>
<th>Start Up Speed</th>
<th>Rated Wind Speed</th>
<th>Maximum Power</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bergey Wind Power</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1 Kw-XL.1</td>
<td>6.7 mph</td>
<td>24.6 mph</td>
<td>1,300 watts</td>
<td>$5,800</td>
</tr>
<tr>
<td>10 Kw-Excel</td>
<td>7.5 mph</td>
<td>27 mph</td>
<td>10,000 watts</td>
<td>$26,500</td>
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<tr>
<td><strong>Urban Green Energy</strong></td>
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<tr>
<td>Eddy</td>
<td>7 mph</td>
<td>27 mph</td>
<td>600 watts</td>
<td>$5,537</td>
</tr>
<tr>
<td>Eddy GT</td>
<td>7 mph</td>
<td>26 mph</td>
<td>1,000 watts</td>
<td>$7,000</td>
</tr>
<tr>
<td>UGE 4K</td>
<td>7 mph</td>
<td>26 mph</td>
<td>4,000 watts</td>
<td>$22,500</td>
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<tr>
<td><strong>A&amp;C Energy Inc.</strong></td>
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</tr>
<tr>
<td>Talon Series- 2Kw</td>
<td>5.6 mph</td>
<td>20 mph</td>
<td>2,400 watts</td>
<td>$16,745</td>
</tr>
<tr>
<td>Talon Series-5Kw</td>
<td>6.7 mph</td>
<td>24.6 mph</td>
<td>5,400 watts</td>
<td>$26,200</td>
</tr>
<tr>
<td>Talon Series-10Kw</td>
<td>6.7 mph</td>
<td>24.6 mph</td>
<td>12,500 watts</td>
<td>$54,445</td>
</tr>
<tr>
<td>Talon Series- 30Kw</td>
<td>6.7 mph</td>
<td>23.3 mph</td>
<td>32,000 watts</td>
<td>-</td>
</tr>
<tr>
<td><strong>Hummer Wind Power</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5Kw Turbine</td>
<td>5.6 mph</td>
<td>22 mph</td>
<td>7,500 watts</td>
<td>$11,393</td>
</tr>
<tr>
<td>10Kw Turbine</td>
<td>6.7 mph</td>
<td>22 mph</td>
<td>15,000 watts</td>
<td>$22,069</td>
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</table>
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<tr>
<td>Xzeres 110</td>
<td>-</td>
<td>22 mph</td>
<td>2,500 watts</td>
<td>$23,332</td>
</tr>
<tr>
<td>Xzeres ARE442</td>
<td>-</td>
<td>25 mph</td>
<td>12,000 watts</td>
<td>$58,650</td>
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<td><strong>Southwest Windpower</strong></td>
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<tr>
<td>Air X</td>
<td>8 mph</td>
<td>28 mph</td>
<td>400 watts</td>
<td>$699</td>
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<tr>
<td>Air Breeze</td>
<td>6 mph</td>
<td>28 mph</td>
<td>160 watts</td>
<td>$699</td>
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<tr>
<td>Whisper 100</td>
<td>7.5 mph</td>
<td>28 mph</td>
<td>900 watts</td>
<td>$2,760</td>
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<tr>
<td>Whisper 200</td>
<td>7 mph</td>
<td>26 mph</td>
<td>1,000 watts</td>
<td>$3,015</td>
</tr>
<tr>
<td>Whisper 500</td>
<td>7.5 mph</td>
<td>27 mph</td>
<td>3,200 watts</td>
<td>$7,810</td>
</tr>
<tr>
<td><strong>SpiralAirFoil</strong></td>
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<tr>
<td>6 ft. Model</td>
<td>1.5 mph</td>
<td>-</td>
<td>-</td>
<td>$9,600</td>
</tr>
<tr>
<td>10 ft. Model</td>
<td>1.5 mph</td>
<td>-</td>
<td>-</td>
<td>$15,000</td>
</tr>
</tbody>
</table>
• **SpiralAirfoil: How it differentiates itself**

  • The unique, innovative and patent-pending design of the SpiralAirfoil Wind Turbine allows for the capture of a substantially larger volume of wind compared to the traditional tri-blade wind turbines.

  • The total surface area of this new design allows for the capture of wind for 360 degrees of the unit’s circumference compared to approximately 30 degrees for traditional tri-blade wind turbines.

  • Starts up at around 1.6 mph compared to three blade models that need higher wind speeds to start up.
SpiralAirfoil: How it differentiates itself

Final testing and quantity may affect the price structure. It is anticipated that unit cost for a small to medium residential system would be from $3,500 to $30,000, depending on size, tower height and material, and power storage and distribution system. A possible average price would be around $9,600.00 for a six foot unit and $15,000.00 for the ten foot unit.
• SpirAlairfoil durability

• Materials include:
  • Anodized aluminum
  • Stainless steel
  • Carbon fiber
  • Galvanized tubing
  • Heat treated rust preventative
A Sampling of Distributors

EcoSource Inc

- **Business type**: wholesale supplier
- **Product types**: photovoltaic systems, alternative homes and buildings, wind turbines (small).
- **Service types**: consulting, installation, education and training services, site survey and assessment services
- **Address**: 12870 W 525 S, Columbus, Indiana 47201
Green Energy Solutions

- **Business type:** retail sales, wholesale supplier, distributor
- **Product types:** wind turbines (large) vertical axis, wind turbines (small) vertical axis, wind energy systems (large), wind energy systems (small), solar thermal energy, LED lighting.
- **Service types:** design, installation, project development services
- **Address:** 12043 W. Cross Dr. Ste. 104, Littleton, Colorado 80127
Big Dog Home Systems

• **Business type:** retail sales, distributor
• **Product types:** photovoltaic cell materials, wind turbines (small).
• **Service types:** consulting, design, installation, project development services, contractor services, testing services
• **Address:** 3978 Rainbow lane, Chubbuck, Idaho USA 83202
Aero Wind Energy, Inc

- **Business type:** wholesale supplier
- **Service types:** installation
- **Address:** 2610 Hwy 32, Suite B, Chico, California 95973
Apache Solar Inc

• **Business type:** retail sales, wholesale supplier

• **Product types:** solar roofing systems, wind turbines (small), DC to AC power inverters, solar water heating systems, solar water heating components.

• **Address:** 40134 Industrial Park Circle, Ste. 103, Georgetown, Texas 78626
NuEnergy Store LLC

- **Business type:** manufacturer, retail sales, wholesale supplier, importer, distributor

- **Product types:** wind energy systems (small), wind turbines (small) vertical axis, wind turbines (small) horizontal axis, Energy Audits Commercial Light Industrial.

- **Service types:** consulting, installation, education and training services

- **Address:** 6200 n I-35, Industrial Blvd, Edmond, Oklahoma 73034
Prevailing Wind Power

- **Business type:** retail sales, wholesale supplier, distributor
- **Product types:** wind turbines (small), photovoltaic systems.
- **Service types:** consulting, installation, project development services, site survey and assessment services, contractor services
- **Address:** 324 N Gertruda Ave, Redondo Beach, California 90277
Absolute Renewables

• **Business type:** retail sales, wholesale supplier

• **Product types:** solar electric power systems, wind turbines (small), tankless water heating systems, backup power systems, solar lighting systems, DC to AC power inverters, Anything Solar Related.

• **Address:** 1008 Howard St. #110, Rapid City, South Dakota 5770
• Logo Design Options

SpiralAirfoil

SpiralAirfoil

SpiralAirfoil

SpiralAirfoil
**Brochure - Outside**

Meet the Team

Dan Parker, Inventor

Upon creation of the wind turbine design, he began his SpiralAirfoil Division in September 2009.

Product Developer, Dennis Noonan

Owner of Blanchard Machine Development in Hillsborough, NH, put Parker’s idea into action, with the construction of the first SpiralAirfoil wind turbine.

*To think how much the state and region could benefit from this technology, it’s ridiculous.* Noonan said. *We’re trying to be patient. Hopefully it’s only a matter of time.*

Contact Information:

SpiralAirfoil

Dan Parker

Telephone: (603) 848-2776

E-mail: spiralairfoil@hotmail.com

Address:

SpiralAirfoil

17 Holman St.

Hillsborough, NH 03244

Visit us on YouTube and FaceBook!
The Future of Wind Power
Turbine technology could revolutionize the market.

SpiralAirfoil
Wind Turbine

Our mission is to provide our customers and distributors with the most efficient wind energy systems. By incorporating our unique design, cost efficient wind turbines we will produce more energy at lower wind speeds.

It’s three to five times more powerful than a traditional three-blade windmill, and can function at a much lower speed, requiring just 2 mph of wind to start up.

Different wind turbine designs produced by SpiralAirfoil:

- SpiralAirfoil (Original Design)
- SpiralHydrofoil
- Earth Spiral

Inquire about obtaining your sized Earth Spiral™ for that special place on your property.

Select properties holding Earth Spiral may be approved by Dan Parker.

The SpiralAirfoil (pictured above) is a tunnel-shaped wind turbine that’s six feet in diameter and 10 feet long. This prototype has plastic blades that spiral in the wind like a corkscrew.
• Website Objectives

• Create awareness
• Emphasize strengths such as low start-up speed, and noiselessness
• Link the SpiralAirfoil website with social media outlets such as Facebook, YouTube and Google.

• http://spiralairfoil.weebly.com/

• http://www.facebook.com/pages/SpiralAirfoilcom/10101902342888
Press Release

SpiralAirFoil to present its eco-friendly wind turbine on the Franklin Pierce University campus on Earth Day

Rindge, NH- March 9, 2011- Franklin Pierce University will be holding a wind mill demonstration in the Library courtyard on Wednesday April 20, 2011 from 11:00 am until 2:00 pm.

The founders of SpiralAirFoil will be on campus for this Earth Day event to demonstrate their wind turbine. The turbine is geared toward home owners at an affordable price. The small start-up company has developed a prototype that has competitive advantages over other turbines, including the ability to generate electricity with minimum wind speeds.

Throughout the academic year, a team of business students has worked closely with SpiralAirFoil in developing marketing and business development initiatives. The Small Business Advisory Group (SBA), facilitated by Jason Little, Associate Professor of Marketing, works in partnership with the Small Business Development Center of NH. The SBA is actively involved with consulting small businesses and start-up companies throughout the Monadnock Region. The student presentation of their work will be held on Friday, April 15th, from 1:00-1:50, in Fitzwater Center Room 102.

The public is warmly invited to both of these events.

Franklin Pierce University is a private, regionally accredited university grounded in the liberal arts, with a focus on personal attention and high-quality instruction.

For further information contact:
Kimberly Faiella at Faiellak@franklinpierce.edu or (508) 776-0944
Alison Harper at Harpera@franklinpierce.edu or (207) 837-8712

###
• References


