



Vento: Wind Turbine Education Kits Business Plan Portfolio

Team Members and Contacts

The number of people involved in *Vento* 26 students with 16 mechanical engineering students, five electrical engineering students, and five business students. Our faculty and community support includes seven teachers and prominent community business owners. In the fall semester the mechanical engineering teams focused on building four different prototypes of turbines to compete while the business team focused on finding a feasible market for the turbine design. This spring the different prototypes were then tested and the best design was chosen to bring to compete in Las Vegas. There were four different mechanical engineering teams. When the turbine design had been chosen, members of the electrical and mechanical engineering teams have been contributing to the business plan and model.

Mechanical Team

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Executive Summary

With record growth in the wind energy industry and the increasing discussion of its role as a viable energy source, we at *Vento* determined that the educational market offered a strong opportunity to not only utilize our innovative turbine design but also to educate our younger population about the benefits and utility of renewable wind energy. Vento's plan is to offer an educational kit that gives the buyer everything they might need in order to learn about the clean energy, all while having access to learning materials and software that will aid in their experience. We are hoping to promote STEM research in high school aged students and to broaden the horizons for students enrolled in college curriculum. Vento believes that educating the upcoming generations on clean energy production will make for a greener future.

Vento's growth strategy starts by focusing on introducing out turbine kits in Idaho to the 703 high schools and 23 colleges in the state. We believe that this market is a smart place to start as it builds on the state's interest in renewable energy, potentially leverages several initiatives in the state to promote science, technology, engineering, and math (STEM) programs, and offers a close market to test the product introduction. In addition to various state supported initiatives, Vento plans to capitalize on federal government-sponsored programs that advocate STEM and energy education.

The competitive advantage of Vento's wind turbine kit is based on the quality of our product and the cost advantage that it offers in the market. Comparing Vento products to the competition shows that we hold a solid price advantage with a higher quality and more durable turbines than other kits on the market. In addition, Vento expects to enjoy an early stage growth advantage with its focus on Idaho and surrounding states as its starting point.

Vento's startup costs are relatively low, giving Vento an advantage. Its focus on Idaho as its initial market offers potential program funding from organizations such as the Idaho Technology Council, the Idaho Department of Education, and the Idaho Department of Commerce. We at Vento believe that



through education we can prepare upcoming generations to create cleaner communities and eventually a cleaner earth.

Business Overview

The renewable wind energy industry has shown record growth in 2014 and the American Wind Energy Association reports that wind energy will continue to lead the way for affordable and reliable renewable energy (Kiernam, 2014). As the Department of Defense continually invests in energy technological innovations, the cost of wind energy has declined by 43% percent in the last four years and is expected to grow 20% of the U.S. power grid by the year 2030 (Kiernam, 2014).

Comparing 2014 to previous years on the basis of net power (megawatts) generation, growth was estimated to be 19% in relation (Kiernam, 2014). The industry for renewable wind energy is proving to be increasing, creating a broader market for turbine manufacturing. Additionally, this increase brought net generation to 4.13% of the United States electricity connected to the American power grid (Kiernam, 2014). According to the American Council on Renewable Energy, these growth numbers prove that the demand for renewable wind energy has the chance to keep rising steadily. The 2014 outlook for net power generation will potentially power 3.5 million households in 2014 as more power is being produced in record history (Kiernam, 2014).

The Company and the Concept: Vento, an Idaho based wind turbine manufacturing company will introduce renewable energy education and power generation to our marketing segments. Product offerings consist of educational based turbine models, varying blade/hub designs, software measuring efficiency and energy output, while ultimately producing a maximum of ten watts of electrical power.

As an Idaho company, Vento plans to start locally with our principal customer segment. The market for Vento's educational based turbine models consists of college renewable energy programs, high school based early STEM classes, and government sponsored wind energy incentive programs.



Market Opportunity

Product: Vento will manufacture and distribute wind turbines throughout the educational market as a product bundle. Generally, Vento's starting product would be base wind turbine. This turbine is relatively small, with diameters of 17 inches by 17 inches by 17 inches. Although power generation is low, consisting of a maximum ten watts, our turbines can be utilized to test efficiencies, aid in renewable power generation research, and STEM understanding development. Unlike similar products on the market, Vento's wind turbines will offer various blade sets with design modifications included with the hub purchase. Varying blade sets will aid in the educational aspect of Vento's turbine purpose, as it will allow student users to measure efficiencies, speed, output, and torque. Specific varying blade designs will be determined as research and development continues to drive Vento's educational turbine kits development. As an added bonus to testing various efficiencies, speeds, outputs, and torque, hub design will provide grooves to change rotation of the blades that will aid in changing wind cut in speed.

Additionally, Vento has designed data reading software that relays readings on various alternatives to the wind turbine outputs over a period of time. These outputs can be utilized in providing real time data processing for the benefit of teaching turbine mechanics or even renewable energy creation. Furthermore, blade alternatives and hub design will provide aid in various data outputs, creating real world situations in a classroom setting. Implementing software to provide output readings will come at little cost to Vento, as an existing program will be used in our product bundle. Furthermore, if software is not needed to test data over a period of time, customers can rest assure knowing that a different alternative will be made available to test situation outputs. A multimeter can be provided to test the turbines as they are actually producing output, if software is not needed. At the time of purchase, the customer may choose which output reading alternative they find viable and software may be obtained online through the Vento website. In addition to Vento's wind turbines and software tools, learning modules will be provided, included in the consumer purchase, which Vento believes will be



most effective when utilizing the wind turbine educational kits to aid in the learning process. Wind turbine utilization is not indicative of specific module usage, but suggested for peak learning potential.

Vento is aware that not every educational program offered will have wind tunnels to effectively test wind turbines and their various outputs. There for adaptability can occur when these turbines are taken outside and utilized in a natural wind generation setting.

Entry and Growth Strategy: Vento is an Idaho based company and as we penetrate the market, we plan to start locally in the state of Idaho with surrounding high schools, college programs, government programs, and other renewable energy programs. To start, Vento will seek backing by the Idaho Technology Council (IGEM), Idaho Department of Education, Department of Commerce, and the State Board of Education. To address their interest in our startup, we emphasize the fact that we are local and promote interest in Idaho for renewable energy alternatives, while promoting STEM research, and giving these councils the options to promote these things within their state while supporting an Idaho startup in production process. Having backing from these councils will ensure key success for Vento.

If Vento can generate sufficient interest and support through various boards, utilizing their already established marketing infrastructure would be Vento's next step. If these councils back Vento's wind turbine educational kits, they're going to want to market that they are helping promote locally, and we will remain strongly reliant on that guarantee to keep marketing costs down.

Vento cares about our state. We want to offer reliable turbines at a reasonably low cost to our market, giving us a competitive edge over competitors in the industry. Growth is important for any new startup but may prove slow for Vento, since many of our marketing segments do not regularly purchase equipment such as ours on a significant scale. Vento will rely on durability and price when attracting return customers and when prospecting for potential future customers, as our competitors offer products of lesser material and at an unreasonably high cost. If Vento can convey our product value to our customer through durability and price, we will achieve growth beyond our initial product launch.



4



Customer Analysis and Market Size: For Vento, the primary customers will consist of high school classrooms that provide early STEM curriculum, college level programs, government programs, technical programs, and power companies that offer varying levels of renewable wind energy education utilizing the educational wind turbines. Secondary customers could be any individuals seeking to learn wind renewable energy outside of the classroom setting. Both marketing segments are viable and offer potential future customers for Vento. As previously mentioned, Vento will start locally, with most of our first customers being the state of Idaho.

Since most of Vento's marketing segments rely heavily on outside funding to support their purchasing decision, such as high schools who rely on board of education funding and colleges who rely on the number of enrollees to provide funding for the college, Vento will remain vigorous in our promise to provide quality and durable products that do not require immediate repurchase. This will strongly sway the buying decisions of Vento's customers when considering limited funding or future funding. With this in mind, until competitors match Vento's pricing strategies, customers purchasing decision should not be strongly swayed from purchasing products from Vento.

External Customer: Since the original marketing objectives for Vento's wind turbine educational kits were intended to be towards high school curriculum and college level energy programs, most of our customers will consist of these two market segments. Currently, Idaho has a total of 703 public high schools that could potentially purchase Vento's product (Education, 2014). To better understand what this means, the breakdown of students between listed public schools is 251,712, meaning that this is the number of students that could potentially benefit from Vento wind turbine education kit integration into their classrooms (Education, 2014). If in fact we wanted to break down this market more specifically to better understand the individuals that would specifically make up the marketing segment of high school students in Idaho, we would see specific demographics of these students as roughly 126,884 students being male, while 121,745 being female (Education, 2014). It is currently unclear as to whether



males or females would be more interested in early STEM education development in the classroom, but could be important for marketing program development. As the demand for renewable energy rises, as it currently is projected to do, Vento believes that we can see trends rising in the future with higher integration in the classroom. Vento estimates that if the company can spark interest in the classroom, then most high schools would offer one class that would utilize the wind energy educational kits that we offer. A typical classroom size is around twenty-four students and the ratio of product per student is typically one to five. Vento estimates that for every high school that implements the educational turbine kits, around five kits would be sold per high school section, totaling 7,030 kits in a three-year period.

Furthermore, there are around twenty public and private colleges and universities in the state of Idaho, six of which provide programs that offer energy degrees and certificates (Pacific, 2014). These colleges include: College of Southern Idaho, Eastern State Idaho Technical College, Idaho State University-ESTEC, University of Idaho, Boise State University, and North Idaho College. Through the total list of college students attending these colleges and universities, around 16,647 tend to graduate and move beyond the undergraduate level (Statesman, 2013). As of now Vento is looking at 15 kits per college classroom labs, with a typical three labs per college, totaling 1,125 kits in a three-year period

Additionally, Vento plans to break into the government sponsored wind programs and initiatives, such as the current one that is being sponsored by the Department of Energy. There aren't many as we currently begin to scratch the service of wind energy in Idaho, but we find it plausible to spark said programs after integration of Vento's product in the market. Currently, Vento can take advantage of the Idaho Office of Energy Resources, and the Idaho Financial Incentives for Renewables and Energy Efficiency.

Internal Customer: The internal customers are the key player in the funding and development of Vento's initial product, in particular the Idaho Technology Council (IGEM), Idaho Department of Education, Department of Commerce, and the State Board. As Vento continues to manufacture and



distribute wind turbine educational kits, we hope to build a bond with these councils in hopes of partnership or stakeholders within the company.

Competitors and Competitive Edge: After viewing competitors that offer similar products as Vento, we believe two stand out as potentially direct competitors within the industry. In addition to Vento, companies such as KidWind and WindBlue Power provide similar products within the industry that could potentially pose a threat when entering into the market.

KidWind offers two sets for purchase. The first kit being a basic kit that ranges in price from \$97 to \$256, with additional add-ons costing the consumer more (Kid, 2014). Additionally, they offer advanced kits that range in price from \$139 to \$363, with additionally add-ons for this specific design as well (Kid, 2014). All turbines provided by KidWind are 24 inches in height, with a blade diameter of 35 inches, ultimately producing a mere 0-2 watts. Additional gear ratios are also provided.

A relative strength of KidWind is the fact that they are the main wind turbine educational kit on the market today, with a backing from Vernier who produces the turbines that KidWind utilizes. Furthermore, Kidwind already has an initiative to adapt their kits into classrooms to ultimately teach young students engineering and technician skills. KidWind is limited by their market in the fact that they are marketing to students under the high school and college level, and have not gone beyond this market with the KidWind label. Venier on the other hand has been integrated into the college, high school, and middle school science classes.

Vento's other competitor is WindBlue Power. Although WindBlue is not competing in the same market as Vento, they could potentially be an alternative if they were to explore marketing options with their "lite breeze" turbine. Starting at \$549, this option produces quite a bit of wattage, averaging 800-1000 watts of power at 70 miles per hour wind speeds (Wind, 2014). In reality, there are very few places that offer this sort of consistent wind that would effectively utilize WindBlue Power's turbines. Like Vento, the "lite breeze" is made of reliable materials, most of which is stainless steel that resists



corrosion over time. For further information on characteristics and competitive advantages of Vento and their competitors, refer to **figure 7**.

SWOT Analysis

Strength: Vento is a manufacturer and distributor of wind turbine educational kits for the rapidly emerging renewable wind energy concept market. Historically, there has been very little infrastructure to produce and effectively utilize inefficient turbines to do more than partially powering a home. Vento will emerge into this market with core strengths that only this company utilizes. One of Vento's major strengths is the quality, durability, and reliability of its product offering in comparison to price per turbine, alongside an effective business-to-consumer and business-to-business relationship with Vento's customers. A business-to-business relationship can be characterized as an indirect sale business model to our end consumer and could show to be profitable to Vento if the company can sell kits to Idaho Technology Council (IGEM), Idaho Department of Education, Department of Commerce, and the State Board. A business-to-consumer model where Vento would provide effective distribution directly to the end consumer, that being high schools, college programs, technical programs, and government programs. Vento also has the competency of price differentiation, since educational kits provided on the market are much higher in cost than what Vento will offer to the consumer.

Weaknesses: Vento's biggest weakness is the fact that the company sells a non-essential product. If Vento can no longer compete or satisfy customer wants or needs, the company will not continue to make profit in its five year forecast. Additionally, Vento is a startup meaning they may not initially have strong business connections, patent protections, and experience to back its business model until they can launch and test the market, product design, and customer satisfaction. Another potential weakness could be the fact that Vento will lack capital if not backed by Idaho Technology Council (IGEM), Idaho Department of Education, Department of Commerce, and the State Board. Furthermore, Vento could



fall under irregular demand quantities during times when demand is down. If this were the case, Vento would have to manufacture with just-in-time inventories and might not be maximizing its supply chain. *Opportunities:* Opportunity takes place for Vento as they begin to penetrate the wind turbine energy market that is on constant emergence. Since price compared to quality is a competing factor for Vento we have the ability to explore various markets that would utilize price sensitivity in addition to durability, such as selling with local at home kits that could surpass even the classroom or educational setting for future growth. Additionally, as technology and innovation are driving down costs to produce, Vento has the opportunity to produce at lower costs as the industry becomes more mature.

Threats: New and advanced technologies are rapidly being developed in today's economy. Vento, like any company, can gain from lowering their costs of production and making supply chain a little more efficient than their competitors. It is essential that Vento take advantage of technologies on the market today that could drive innovation for products manufactured and encourage future growth before its competitors. Additionally, it may be challenging for Vento to compete outside of the Idaho or even globally until we move past producing and funding locally. Furthermore Vento is at a disadvantage because they lack an established distribution network.

Product Improvement and New Products: The status of product development is in the prototype stage. Resulting from multiple design refinements and several tests, the prototype wind turbine is consistently producing 10 watts of electricity within an acceptable range of wind velocities. This consistency of output is sufficient to begin production of the educational turbine kits. The philosophy adopted by Vento necessitates continuous improvement. Therefore, multiple iterations and design improvements will be implemented.

The most urgent product improvement will be the addition of the yaw mount. This will allow students that do not have access to a wind tunnel to conduct tests. With the management structure of the company consisting of business and engineering specialists, the use of the interpersonal customers



support system will facilitate adaptability for product improvement and new products based on customers' needs. As sales grow and investment capital becomes available, Vento will design new products to complement the existing educational wind turbine kit. These products will be determined by customer feedback and projected demand based on information gathered through customer contact.

Financial Analysis

Costs: Fixed costs include tooling for IM parts (Molds). The initial cost for producing the injectionmolded turbine blades includes \$5,50 fixed cost for the cavity itself. Domain Maintenance fees of \$12.00/month are fixed to allow the company to provide customer service and communication for technical support. Additionally, Vento is looking for office space to help facilitate customer service. These costs can be as high as \$1530 a month and as low as \$366 a month with consideration to location in Boise, Idaho. Variable per unit costs are currently high due to the low volume initial production run. As demand increases and more units are required, Vento can order larger batches of blades and wholesale quantities of off the shelf components that will facilitate lower variable costs.

Proprietary Issues: Intellectual Property is an issue that needs addressing before production can commence. As the initial entrepreneur, the Department of Energy is entitled to a percentage of equity in exchange for capital contributions. Boise State University has a policy of taking up to forty percent equity in a company that students have started while at the university. Even though the engineering students have developed the airfoil designs, the design is being thoroughly checked through the USPTO to ensure that the company will not owe royalties to holders on patents on airfoil design. Contracts including licenses to manufacture may become appropriate as demand drives up production volume.

Product Development and Operations

Designed for manufacture and design for sale are inherently built in to prototype models due to the seamless interaction and communication between key engineers and business individuals. Packaging the educational wind turbine kits with a personalized, hands-on customer service program puts the



company in touch with the end users of the product. This personalized customer relationship gives the company important feedback and direction to improve product design features and accessories and components to complement the educational experience.

Approach to Manufacturing: Low volume initial production runs will be necessary due to limited available capital and lack of market information. The majority of the components of the wind turbine kit are purchased off the shelf and packaged with the turbine blades, hub, shafts, and nacelle included in the kit along with the generator and control module. As demand increases more compliments can be purchased at wholesale quantities and some manufacturing can be outsourced to reduce long run variable costs. The engineering team has developed a software program that will be available for download from the company website. This program has the ability to record the energy output from the turbine over a period of time.

Technical Design, System Specifications: The prototype wind turbine system consists of off the shelf alternator, gearbox, bearings, metal shaft, flexible coupler and electronic components. Electronic components are assembled and used to develop the power management system. The prototype turbine blades, developed by the mechanical engineering team, are 3D printed for the purposes of preliminary testing and for the collegiate wind competition. Production model turbines will receive injection-molded blades due to lower cost and the possibility of higher production volumes. The hub that attaches the turbine blades to the main shaft is machine from aluminum for safety and longevity. An emergency manual braking system is also employed for additional safety. The nacelle, the housing that contains the electrical generating components of the turbine, is of a simple metal plate design. Although this design fulfills the requirement of the collegiate wind competition rules, this nacelle design is ideal for educational purposes so students may study the forces at work in the components required as the wind turbine functions.





Operating Cycle: Vento's unique production plan utilizes a pull strategy wherein an order placed for the turbine kit is the signal to begin production. Since the only employees have elected to work without salary until the company is viable, there is essentially a zero operating cycle time. Maintaining a zero inventorying will keep costs low but also introduces fragility to supply shocks. Once an order is placed, Vento must scramble to secure availability of all components require to assemble the kit and signal the injection molding company to begin production of three turbine blades. As sales increase, the need for maintaining higher inventories will come naturally but the increase in revenue from those sales can help support higher production run volumes and drive down variable costs. As described in the design report and testing results, the turbine is capable of consistently producing ten watts of electricity.

Management Team

The management team will consist of seven members of the founding party for Vento. These positions include member such as Chief Executive Officer, Sydney Porter with a bachelor's in Entrepreneurial Management. Second, Chief Financial Officers, Brittany Carlson and Shuwun Ma will head the financial department of Vento. Furthermore, Luke Weaver will be head Chief Operation Officer. Next, Chief Engineering Officer will be Cody McConkey to head further research and development. Lastly, Head of Marketing will be Christopher Dant. In the beginning we would split all duties between the seven members of the management team. There will be no management compensation until the company becomes publicly traded, at that point the management team will also equally maintain ownership.



Appendix

A. Detailed Financial Analysis

The initial phase for financing this company will be through grants or a business loan. The two departments through which we would seek funding are the Department of Education and IGEM. They each offered \$3 million and \$950,000 respectively in 2013 to fund projects that include technology or entrepreneurship ventures. Given the uncertainty of obtaining grant funding, *Vento's* alternative to raising capital would be through a bank loan for \$35,000. This will give *Vento* enough capital to build the molds, 100 units of inventory, and 3 months of operating expenses. With that money, \$7,500 will be fixed assets in favor of the company while the other money will be utilized to generate cash flow and sales. With a lean inventory system, it creates a situation where we have lower inventory costs and can utilize most of our capital to build the activities that will generate more revenue. In the initial stages, we are outsourcing all of our manufacturing. Although this makes our per unit cost of goods higher, it drastically lowers our initial fixed costs without needing to purchase machinery, equipment, and a large manufacturing location to build the product.

At a conservative level, *Vento's* initial market of Idaho can generate \$2.24 million in revenue. The current cost to produce one unit is \$186.66 while they are being sold at \$275 retail, roughly a 32% margin. In our first year of sales, we should generate \$747,542 with our cost of goods being \$507,404 with a margin of \$240,138. After all operating costs, our profit will be \$196,952 and our breakeven is at \$134,436. That is roughly 17.98% of projected first year sales and we will be profitable in our first year of operation. In the event our first year demand is less than expected, even at 50% of projected sales, we will still turn a profit of over \$76,000. As the company continues to grow, bringing manufacturing inhouse will help us reduce the per-unit product cost and increase our margins even more.





Currently, *Vento* is valuing the company at \$225,000, 33% of *Vento's* expected first year sales. Based on the initial market of Idaho, this is 10% of the overall expected revenue. Wind and natural energy is an emerging field and will continue to grow. Idaho has seen rapid expansion with large wind turbines being built in several areas throughout the state and will continue to grow as new technology and processes are developed to harness the output of energy. With little debt to build this company, the margins and the upside of the industry as whole, we believe the valuation of the company at this level is reasonable given the early stages of this company. Even though we will require more capital to expand in the future, our ability to be profitable in our first year will give us the capital to reinvest into the infrastructure of the company and expand further, decreasing the probability that we will need more venture capital or loans.





Sources of Fund	. (where you will get t	the money	to fund your project)	
Sources of Fund	ls: (where you will get t	the money	to fund your project)	
quity (money or assets ow	ners/investors will pro	vide)		
Cash	\$0			
Grants	\$0	-		
	\$0 \$0 \$0	_		
	\$0	-		
Total Equity Contribution		\$0	0%	
ebt (borrowed money)				
Bank Loan	\$35,000.00			
Other Debt	\$0	_		
Accounts Payable	\$0	-		
Total Debt Contribution		\$35,000	131%	
			Total Sources of Funds	\$35,000
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Client Name: FINANCIAL STATEMENT:	Vento Pro Forma Inco	ome Statemen	t											
Date Prepared	4/15/14													
	May-14	Jun-14	Ju l- 14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	TOTALS	
REVENUE	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$747,542	100.09
COST OF GOODS SOLD	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$507,404	67.99
GROSS PROFIT	\$20,011	\$20,011	\$20,011	\$20,011	\$20,011	\$20,011	\$20,011	\$20,011	\$20,011	\$20,011	\$20,011	\$20,011	\$240,138	32.19
EXPENSES:														
Office Expense	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$2,400	0.39
Car/Travel	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$2,000	0.39
Acct & Legal	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$4,000	0.59
Rent	\$1,583	\$1,583	\$1,583	\$1,583	\$1,583	\$1,583	\$1,583	\$1,583	\$1,583	\$1,583	\$1,583	\$1,583	\$19,000	2.5
Telephone	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$600	0.19
Utilities	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$4,000	0.59
Insurance	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$3,000	0.49
Taxes (R/E)	\$0	\$1	\$2	\$3	\$4	\$5	\$6	\$7	\$8	\$9	\$10	\$11	\$66	0.09
Int - Loan 1	\$175	\$172	\$170	\$167	\$165	\$162	\$160	\$157	\$155	\$152	\$149	\$147	\$1,932	0.39
TOTAL EXPENSES	\$3,092	\$3,090	\$3,089	\$3,087	\$3,086	\$3,084	\$3,082	\$3,081	\$3,079	\$3,078	\$3,076	\$3,074	\$36,998	4.99
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N PROFIT BEFORE TAX	\$16,920	\$16,921	\$16,923	\$16,924	\$16,926	\$16,927	\$16,929	\$16,931	\$16,932	\$16,934	\$16,935	\$16,937	\$203,140	27.29
INC TX (RATE = 40.00%	\$6,768	\$6,769	\$6,769	\$6,770	\$6,770	\$6,771	\$6,772	\$6,772	\$6,773	\$6,774	\$6,774	\$6,775	\$81,256	10.99
NET INCOME	\$10,152	\$10,153	\$10;154	\$10,155	\$10,156	\$10,156	\$10,157	\$10,158	\$10,159	\$10,160	\$10,161	\$10,162	\$121,884	16.39
PROFIT CENTERS														
P1	\$62,295	\$62.295	\$62,295	\$62.295	\$62,295	\$62,295	\$62,295	\$62,295	\$62.295	\$62,295	\$62,295	\$62,295	\$747.542	1009
P2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	09
P3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	09
P4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	09
P5	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	09
TOTAL	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$747,542	1009
COGS														
P1	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$507,404	1009
TOTAL	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$507,404	1009

4/18/14 8:32 AM

Figure 2. Vento Pro Forma Income Statement



1

Client Name: FINANCIAL STATEMENT:	Vento Pro Forma Casi	h Flow											
Date Prepared	4/15/14												
BUDGET YEAR	May-14	Jun-14	Ju l- 14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	TOTAL
CASH RECEIPTS													
Cash Sales	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$747,5
Coll. from Credit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Draw/(Repay) LOC	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Loan/Equity Inject	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
TOTAL CASH RECEIVED	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$62,295	\$747,5
CASH PAID OUT													
Purchases	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$42,284	\$507,4
Office Expense	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$200	\$2,4
Car/Travel	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$2,0
Acct & Lega	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$4,0
Rent	\$1,583	\$1,583	\$1,583	\$1,583	\$1,583	\$1,583	\$1,583	\$1,583	\$1,583	\$1,583	\$1,583	\$1,583	\$19,0
Telephone	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$50	\$6
Utilities	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$333	\$4,0
Insurance	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$3,0
Taxes (R/E)	\$0	\$1	\$2	\$3	\$4	\$5	\$6	\$7	\$8	\$9	\$10	\$11	Ś
nt - Loan 1	\$175	\$172	\$170	\$167	\$165	\$162	\$160	\$157	\$155	\$152	\$149	\$147	\$1,9
Subtota	\$45,375	\$45,374	\$45,372	\$45,371	\$45,369	\$45,368	\$45,366	\$45,365	\$45,363	\$45,361	\$45,360	\$45,358	\$544,4
Princ. Pmt - Loan 1	\$502	\$504	\$507	\$509	\$512	\$514	\$517	\$519	\$522	\$525	\$527	\$530	\$6,1
Princ. Pmt - Loan 2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Princ. Pmt - Loan 3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Princ. Pmt - Loan 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Capital Purchases	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
ncome Taxes	\$0	\$0	\$20,306	\$0	\$0	\$20,311	\$0	\$0	\$20,317	\$0	\$0	\$20,323	\$81,2
Owner's Withdrawa	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	. ,
TOTAL CASH PAID	\$45,877	\$45,878	\$66,185	\$45,880	\$45,881	\$66,193	\$45,883	\$45,884	\$66,202	\$45,886	\$45,887	\$66,211	\$631,8
CHANGE IN CASH	\$16,418	\$16,417	(\$3,889)	\$16,415	\$16,414	(\$3,898)	\$16,412	\$16,411	(\$3,907)	\$16,409	\$16,408	(\$3,915)	;
Beginning Balance	\$0	\$16,418	\$32,835	\$28,946	\$45,361	\$61,775	\$57,877	\$74,289	\$90,701	\$86,794	\$103,203	\$119,611	
Ending Balance	: : \$16,418 :	\$32,835.	\$28,946	\$45,361	.:\$61,775:	\$57,877	\$74,289	\$90,701	\$86,794	·\$103,203.	\$119,611	\$115,696	

4/18/14 8:38 AM

Figure 3. Vento Pro Forma Cash Flow





Client Name:	Vento												
INANCIAL STATEMENT:	Pro Forma Bala	nce Sheets											
Date Prepared	4/15/14												
	Apr-14	May-14	Jun-14	Ju l- 14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-1
Cash	\$0	\$16,418	\$32,835	\$28,946	\$45,361	\$61,775	\$57,877	\$74,289	\$90,701	\$86,794	\$103,203	\$119,611	\$115,69
Accounts Receivable	\$0	\$10, 4 10 \$0	\$32,033 \$0	\$20,540 \$0	\$45,501 \$0	\$01,775	\$57,677 \$0	\$74,203 \$0	\$30,701	\$00,734 \$0	\$105,205	\$115,011	¢115,03
	\$18.688	\$0 \$18,688	\$0 \$18,688	\$0 \$18,688	\$0 \$18,688	\$0 \$18,688	\$18,688	\$18,688	\$18,688	\$18,688	\$0 \$18,688	\$0 \$18,688	\$18,6
Inventory Prepaids	\$10,000	٥١٥,٥٥٥ <mark>\$</mark> 0	۵۱۵,000 \$0	\$10,000 \$ 0	\$10,000 \$ 0	\$10,000 \$0	\$10,000 \$0	\$10,000 \$0	\$10,000 \$0	\$10,000 \$0	\$10,000 \$0	\$10,000 \$0	\$10,0
	\$600		\$0 \$600	\$0 \$600	\$0 \$600	\$0 \$600	\$0 \$600	\$0 \$600	\$0 \$600	\$0 \$600	\$0 \$600	\$0 \$600	\$6
Other		\$600											
Current Assets	\$19,288	\$35,706	\$52,123	\$48,234	\$64,649	\$81,063	\$77,165	\$93,577	\$109,989	\$106,082	\$122,491	\$138,899	\$134,9
Net Fixed Assets	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,5
Net Intangibles	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
TOTAL ASSETS	\$26,788	\$43,206	\$59,623	\$55,734	\$72,149	\$88,563	\$84,665	\$101,077	\$117,489	\$113,582	\$129,991	\$146,399	\$142,4
						. ,							
Notes Payable - Bank	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Notes Payable - Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Line of Credit Payable	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	\$0	\$0	\$0 \$0	\$0	\$0	
Accounts Payable	\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	
Accruals	\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	
Taxes Payable	\$0	\$6,768	\$13,536	\$0	\$6,770	\$13,540	\$0	\$6,772	\$13,544	\$0 ¢525	\$6,774	\$13,548	¢.
CPLTD-Loan 1	\$502	\$504	\$507	\$509	\$512	\$514	\$517	\$519	\$522	\$525	\$527	\$530	\$5
CPLTD-Loan 2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
CPLTD-Loan 3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
CPLTD-Loan 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Current Liabilities	\$502	\$7,272	\$14,043	\$509	\$7,282	\$14,054	\$517	\$7,291	\$14,066	\$525	\$7,301	\$14,078	\$5
Long-Term Loan 1	\$34,498	\$33,994	\$33,488	\$32,978	\$32,467	\$31,952	\$31,435	\$30,916	\$30,394	\$29,869	\$29,342	\$28,812	\$28,2
Long-Term Loan 2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Long-Term Loan 3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Long-Term Loan 4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Sub. Officer Debt	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Total Liabilities	\$35,000	\$41,266	\$47,531	\$33,488	\$39,748	\$46,007	\$31,952	\$38,207	\$44,460	\$30,394	\$36,643	\$42,890	\$28,8
Common Stock	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Preferred Stock	\$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	
Retained Earnings	\$0	\$10,152	\$20,305	\$30,458	\$40,613	\$50,769	\$60,925	\$71,082	\$81,241	\$91,400	\$101,560	\$111,722	\$121,8
- Treasury Stock	(\$0)		\$20,305 (\$0)	\$30,456 (\$0)	\$40,615 (\$ 0)	\$50,769 (\$ 0)	\$60,925 (\$ 0)	\$71,062 (\$0)	۵۵۱,24۱ (\$ 0)	\$91,400 (\$0)	\$101,560 (\$0)	,	\$1∠1,0 (
		(\$0)										(\$0) ¢111 722	
Total Owner's Equity	(\$0)	\$10,152	\$20,305	\$30,458	\$40,613	\$50,769	\$60,925	\$71,082	\$81,241	\$91,400	\$101,560	\$111,722	\$121,8
TOT LIA & NET WORTH	\$35,000	\$51,418	\$67,835	\$63,946	\$80,361	\$96,775	\$92,877	\$109,289	\$125,701	\$121,794	\$138,203	\$154,611	\$150,6
CHECK	(\$8,212)	(\$8,212)	(\$8,212)	(\$8,212)	(\$8,212)	(\$8,212)	(\$8,212)	(\$8,212)	(\$8,212)	(\$8,212)	(\$8,212)	(\$8,212)	(\$8,2

4/18/14 8:40 AM

Figure 4. Vento Pro Forma Balance Sheet





LOAN INFORMATION

L	OAN 1	
SOURCE OF LOAN:	BANK	
AMOUNT:		\$35,000
ANNUAL INTEREST RATE:		6.00%
TERM (IN YEARS):		5
MONTHLY PAYMENT:		\$676.65

SALES RECEIVABLE POLICY							
DOLLAR SALES IN Apr-14	\$0						
DOLLAR SALES IN Mar-14	\$0						
DOLLAR SALES IN Feb-14	\$0						
DOLLAR SALES IN Jan-14	\$0						
	DOLLAR SALES IN Apr-14 DOLLAR SALES IN Mar-14 DOLLAR SALES IN Feb-14						

CURRENT ACCOUNTS PAYABLE DUE

ACCOUNTS DUE 30 DAYS	May-14	\$0
ACCOUNTS DUE 60 DAYS	Jun-14	\$0
ACCOUNTS DUE 90 DAYS	Ju l- 14	\$0
ACCOUNTS DUE 120 DAYS	Aug-14	\$0

4/18/14 8:42 AM

Figure 5. Vento Loan Information



	BREAKEVEN ANALYSIS				
GROSS SALES	\$747,542				
COST OF GOODS	\$507,404				
GROSS MARGIN	\$240,138				
ITEMS	FIXED EXPENSES	VARIABLE EXPENSES			
Salaries	\$0				
Employee Wages	\$0				
Payroll Exp.	\$0				
Workers Comp	\$0				
Bad Debts	\$0				
Outside Services	\$0				
Supplies	\$0				
Maintenance	\$0				
Ad/Promotion	\$0				
Office Expense	\$2,400				
Car/Travel	\$2,000				
Acct & Legal	\$4,000				
Rent	\$19,000				
Telephone	\$600				
Utilities	\$4,000				
Insurance	\$3,000				
Taxes (R/E)	\$66				
Depreciation	\$0				
Miscellaneous	\$0				
Principal Pmt	· · · ·				
	\$6,188				
nterest	\$1,932				
nt-LOC TOTALS	\$0 \$43,186	\$0			
TUTALS	\$43,186	\$0			
GRAND TOTAL OF EXP	\$43,186				
NET PROFIT / LOSS	\$196,952				
Breakeven af	NALYSIS			ME PROFIT RATIO	
			AFTE	er breakeven	
(\$) FIXED EXPENSES	BR <u>EA</u>	KEVEN POINT			
(%)(GROSS MARGIN)-(VAR EXP	= LENSES)	\$134,436	SALES %	GROSS SALES VOLUME	PROFI
			50.0%	\$373,771	\$76,883
Break even point as a perce	ENTAGE OF		75.0%	\$560,656	\$136,917
PROJECTED SALES	Г	17.98%	125.0%	\$934,427	\$256,986
			150.0%	\$1,121,313	\$317,021
			200.0%	\$1,495,083	\$437,089

4/18/14 8:43 AM

Figure 6. Vento break-even analysis







Figure 7. Business Model Canvas of Vento and competitors

Resources



- Brummer, M. (2013). Energy Industry Educational Programs. Retrieved April 4, 2014, from Pacific Northwest Center of Excellence for Clean Energy: http://cleanenergyexcellence.org/CollegePrograms/
- Education Bug. (2014). Idaho Public School Directory. Retrieved April 1, 2014, from Education Bug: http://idaho.educationbug.org/public-schools/
- Kid Wind. (2014). Renewable Energy Science Kits. Retrieved April 15, 2014, from http://store.kidwind.org/catalog
- Kierman, T. (2014). The Outlook for Renewable Energy in America. Retrieved March 21, 2014, from The American Council on Renewable Energy (ACORE): <u>http://www.acore.org/files/pdfs/ACORE_Outlook_for_RE_2014.pdf</u>
- Roberts, B. (2013). Idaho's off to College—All Over the Place. Retrieved April 4, 2014 from the Idaho Statesman: <u>http://www.idahostatesman.com/2013/09/23/2778488/idahos-off-to-college-all-over.html</u>
- Wind Blue Power. (2014). "Lite Breeze" Wind Generator Kit" with Charger Controller. Retrieved April 15, 2014, from http://www.windbluepower.com/Lite_Breeze_Low_Wind_Generator_Kit_p/cy-low-kit.htm

