

Executive Summary

Company Name: Fairbanks Wind LLC.

Team Name: Breaking Wind

Our Team consists of eight Mechanical Engineers, two Electrical Engineers, one Business Major, and a PHD candidate as an advisor. Our team is shown in Figure 1.



Figure 1: Our team, from left to right in the back row: Shanann Hoyos, Mark Skya, Nick Janssen, Bruce Lee, Pryce Brown, Mathew Staley, Patrick Wade, Donna Hill. In the front row, from left to right, Lance Gatter, Ed Greene, Milaud Baumgartner, and Chic J. O'Dell.

We are based in the interior of Alaska and have extensive back-country and cold climate experience.

Our business overview: Fairbanks Wind LLC. develops micro-scale wind turbines, which produce 10-20W of power when the wind is blowing at 15-25 mph respectively. Our turbines seek to capture the

energy in the wind, and convert this power to electricity that can be used to power such items as phones and tablets. We wish to bring the environment and our customers closer together, in a safe manner. Our vision is that we will be a model of sustainable stewardship while bringing people and their environment together.

Our web address: <https://sites.google.com/a/alaska.edu/uaf-wind-competition/>

Our three main **customer segments** are Off-Grid, Residential, and Educational.

- Off-Grid: Cost: \$350, Materials: The blades are Carbon Fiber with a plastic core, plastic nacelle and nose cone, and a metal hub and braking system. The stand and fold out base are metal as well. The electricity is gathered by the user from a battery storage unit.
- Residential: Cost: \$150. Same materials as the Off-Grid model, but with plastic blades, to reduce cost. Stationary model, no fold out bottom.
- Educational: Cost: \$150. All plastic, simple designs, and not intended for power production. Used as an educational tool in schools and homes. Different blade designs offered to teach about the effect different designs have on power output.

We will be forming our business in Fairbanks, Alaska. We have identified that our best markets are in the farthest north and south latitudes for our off-grid users.

Our turbine has been prototyped and tested and a rendering is shown Figure 2. The blades are built from carbon fiber over plastic.



Figure 2: A rendering of our wind turbine.

