

Executive Summary

Wildcat Wind Power seeks to provide affordable, reliable, and efficient wind and solar powered lighting solutions. We believe that providing renewable-energy powered street lights that work independently from the grid can offer more than just energy savings. During power outages, our street lights will continue to glow, promoting safety during a potentially troublesome time. We believe that this feature will allow us to succeed across the globe, as there are many reasons for grid issues, including weather, maintenance, instability, or lack of resource.

Our business hopes to be a leader in renewable energy technology in the near future. The opportunities that exist with harnessing wind and solar energy are both exciting and a growing necessity. There may not be enough sunlight in the day to get things finished with today's fast-paced and globally integrated economy. In order to keep up and continue economic growth, sometimes a few more hours are needed throughout the day. That's where Wildcat Wind Power can help. We can help light the path for that delivery that needs to be made by sunrise. We can help keep families safe when they get an early start on vacation. And we can be there when a disaster hits, and everything else may seem lost.

We believe that there is a market gap in options for reliable public lighting, especially in hurricane prone areas. Current lighting relies on either metal halide or high pressure sodium lights, which do not last as long, and consume more energy, than LED bulbs. By using solar and wind energy to generate power, and batteries to store this energy, our lights can remain disconnected from the grid. Not only can our streetlights reduce electricity costs, they can also cut maintenance costs. Additionally, our design allows for the streetlight to be easily removed (by appropriate persons) by utilizing a detachable base. This allows for quicker disaster relief by making it quick and easy to replace any broken poles and restore streetlights quicker.

We feel there is great opportunity for our design to be used in the coastal areas of the United States. There is a large potential for harnessing the sea breeze, and with some offshore wind farming efforts halting for various reasons, we believe this solution will be well received by the public. We envision success in this market, and will pursue other markets after this, including the interior US, as well as overseas markets. Internationally, we believe we can succeed greatly, as there can be unpredictable, and sometimes manipulated, control of power from the grid.

Wildcat Wind Power is dedicated to providing reliable, efficient, and environmentally friendly streetlights. To do this we will use wind and solar power to create a streetlight that uses no power from the grid and provides an equal amount of light. It will also provide a source of electricity during times of emergency. Wildcat Wind Power is dedicated to stable financial growth, environmental responsibility, and community improvement.

Our team is composed of Mechanical and Electrical Engineering students from Kansas State. These students compose three main teams: Mechanical, Electrical, and Business. Communication between these three teams has been a challenge, but thanks to current technologies, such as group texting services, and shared online storage such as Google Drive, we have maintained this communication between teams. We hold weekly meetings where all team members attend, to update all other teams on progress made in a certain area, as well as smaller team-specific meetings at other, more frequent times. Our business plan is based off of our Mechanical team's design, with slight variations (found in Appendix B). We decided to implement a twisted-H rotor design in our business plan due to its multi-angular response, however due to manufacturing constraints, were not able to prototype this for our design challenge.

Our company logo, designed by Jay Disberger, can be found in Appendix A. This is our logo that is used in all outward communication, as well as on our team polos. We also include a logo for the

Kansas State College of Engineering, as we are still a design team sponsored by them, and appreciate all the help and support we have received from them.



Figure 1 - Company Logo, Designed by Jay Disberger