Technical Objective

Although there are many solutions for commuters in motorized vehicles to charge their mobile devices, there are very limited options for cyclists to do the same. The Bike Energy Harvester team aims to innovate in this open problem space by developing a cheap, effective, simple to assemble, and disruptive solution that reuses some of the bicycle’s kinetic energy to charge one’s mobile device.

Technical Approach

There were many considerations when deciding how the bicycle was going to generate and store energy. Below shows the Pugh analysis, in which we decided that we were going to use a chain driven alternator in order to generate power.

Innovation

As a group, we decided that it would be hard to come up with something innovative to generate the power from a bicycle, so we instead thought of ways in which we can use the power that was generated from the bicycle. With the addition of our front panel, you can see the different ways in which the energy harnessed will be used such as powering a speaker.

Related Work and Current State of Bicycle Energy Harnessing

When looking into other energy harnessing bicycles, we noticed a trend. We were finding many different patents on ways to charge a battery via a bicycle, but found little to no energy storing devices for BMC bicycles. In order to reach a new demographic of customers, we decided to use a BMX bike. This adds new possibilities for people who prefer a BMX bike over a traditional, geared bicycle.

Commercialization and Potential Partnerships

- Steps to commercialization
  - Finalize the design
  - Reach target demographic via advertisements
- Potential Partnerships:
  - Reach out to manufacturers for incorporating this system into bicycles.