**Team Name :** \_\_\_\_\_\_\_TESLA\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Abstract:**

In recent times due to effects of pollution and global warming there is a need for generating power from renewable sources and as power generating stations are far away from the loads this poses the problem of transmission and distribution. By this project we make an efficient, affordable and portable power source powered by rubber. Rubbers have capability to store huge energy when they are stretched; this energy is very high compared to weak gravitational energy. This project extracts this potential energy stored in stretched rubber to power a 1 watt led for minimum period of 20 minutes. When a stretched rubber regains its original shape, this motion is used to run a dc generator which powers the led connected.

**Introduction**

In olden days mechanical clocks were powered by using slow falling weights, they had achieved this using gears and escapement governed by pendulum. The weight once raised to a certain height would power the clock for days together. We use this ancient technology to provide portable power source to remote villages.

In our project, weight is replaced by rubber and the escapement is LED itself. The potential energy of the stretched rubber is converted into rotational mechanical energy which is used to drive DC generator through gears. The voltage limiting characteristic of LED shown below acts as escapement and restricts the speed of the DC generator to constant speed, for example if a led having cut-off voltage of 12v connected to output of a generator, which requires 300rpm to generate 12v then mechanical input of generator will not exceed 300 rpm. This speed limiting action of LED in turn makes the rubber to retract at slow pace instead of instant retraction. Thus we can run generator powering LED for prolonged time of 20 minutes.

**Motivation**

Remote villagers of many underdeveloped and developing countries haven’t seen a glimpse of electricity in their life. They spend their nights miserably by using kerosene lamps. Usage of these kerosene lamps is very harmful to the health as it causes lungs related diseases. These lamps require money for buying kerosene. Though we have solar technology which solves this problem but it’s very expensive and unreliable. This solution of ours is environmental friendly, affordable and reliable. This also becomes a power source at any place.

**Methodology**

Auto feedback which governs

Speed of generator

DC Generator

Gear box

Rubber arrangement (Mechanism to Store potential energy)

**Social Impact**

Many people still living in remote places still don’t have access to electricity, so they rely on kerosene lamps for lighting their houses. These kerosene lamps have inbuilt problems of causing pollution, fire hazards, health hazards and also consume little money earned by the family for buying the fuel. So our project is intended to solve all the above problems. Even in urban areas people can use it during load shedding as battery technology is costly.

If this idea is researched and developed in future, this can be a method of local renewable power generation.

**Market Survey**

Till now no one has tried to produce electrical energy from rubber, so our product will be the first one to employ that for human benefits. If this product gets released in the market it will give low cost and reliable service to the society.

This product has potential to completely wipe out usage of kerosene lamps in society, as

1. It requires only one time investment unlike kerosene lamps which demand repeated expenditures for kerosene.

2. A nation will be healthy if its citizens are healthy and economical, as burning kerosene causes health hazards, it depletes economic growth of the country.

3. Under government schemes this product will be sold at subsidised price.