PROJECT: PRESSURE OPERATED LIGHT

(Category: Renewable energy)

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Background

Let's consider a specific place where people use electricity to drive most of their needs. Now can you conceive of

electricity wastage in the area? Take the example of India in 2015 alone 3 billion units of power is wasted. Now you can wonder what this figure is for the whole world.
Let's consider the points where we waste electricity.
The most common mistake committed by every person is switching off lights when not in use. And this alone accounts for 40% of total wastage.
Transportation losses account for 20% of the total.
Industrial wastage accounts for about 30-40% of total wastage.

Take the most common mistake, its also committed on roads with street lights. They remain on all night, whether in use or not, increasing the wastage and maintenance cost too.
So to cope with the problem, we together as a team come up with an idea of ***Pressure Operated Light***.

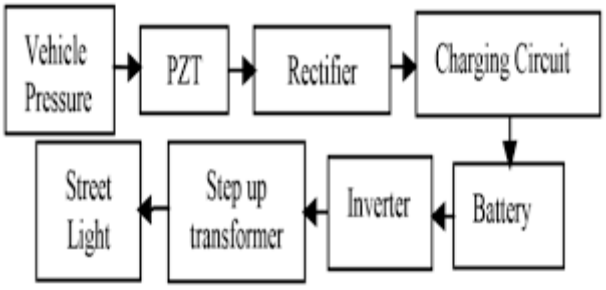
Brief Description

So going by the name, we got that the light will operate by pressure. Now comes the problem. How will we sense the pressure and control lights? What will we use in sensing pressure? To simplify all our problems, we called ***Mr. Pierre Curie***, who came up with the idea of the ***Piezoelectric effect***. With effect comes the sensor. A ***piezoelectric sensor*** is a solution to all our problems. This sensor works on the principle of piezoelectricity, which means something like: ***Piezoelectricity*** is the electric

charge that accumulates in certain solid materials in response to applied mechanical stress.

Working

Now using this ability, we can not only sense pressure but can also generate electricity. ***Piezoelectric plates*** are to be introduced on the road to sense the pressure. And will use this data to operate the lights. Three lights will be operated mutually, one alongside the pressure point and the other two being the next and the previous one. And during the day time, all the vehicle will stimulate the ***production of electricity***. The energy produced will be stored in batteries and this stored energy will be consumed during night making it a ***self-reliant system***.



Feasibility and applicability

These two points will decide whether the quality of any project is relevant or not. Any project is considered to be worked on based on these two points. And we designed this project, taking these points into consideration.

This project is ***cost-efficient*** and ***durable***, has nearly ***no maintenance cost***, making it a ***one-time installment***. This project will reduce energy demand significantly, helping developing countries to meet their energy demand.
This project requires the installment of ***piezoelectric plates*** on the roads and batteries to store the produced energy.