

Road Power Generation

(Electricity Generation from Vehicle Movement)

Man in his lifetime, uses energy in one form or the other. In fact whatever happens in nature, results, out of the conversion of energy in one form or the other? The blowing of the wind, the formation of the clouds and the flow of water are a few examples that stand testimony to this fact. The extensive usage of energy has resulted in an energy crisis, and there is a need to develop methods of optimal utilization, which will not only ease the crisis but also preserve the environment. Energy conservation is the cheapest new source of energy. This paper attempts to show how energy can be tapped and used at a commonly used system, the road power generation. Road Power Generation (RPG) is one of the most recent power generation concepts. This device converts the kinetic energy of the vehicles into electric energy by installing moving plate on the road, it takes the stroke motion of the vehicles and converts it to the rotary motion by crank mechanism and it generates the electricity. This paper also explains clearly, the working principle of the designed system, its practical implementation, and its advantages. Design of each component has been carried out using standard procedures, and the components have been fabricated and assembled. A similar model of the system has been modeled using Pro-E. Practical testing of the system has been done with different loads at different speeds. Taking the various criteria that determine the power generation, graphs have been plotted. The utilization of energy is an indication of the growth of a nation. One might conclude that to be materially rich and prosperous, a human being needs to consume more and more energy. And this paper is best source of energy that we get in day to day life.

This paper presents the overall concept of Road Power Generator (RPG) that deals with the mechanism to generate electricity from the wasted kinetic energy of vehicles. It contains a flip-plate, gear mechanism, flywheel, and finally a generator is coupled at the end so that the rotational motion of the flywheel is used to rotate the shaft of the generator, thus producing electricity. RPG does not require any piezoelectric material. It is novel concept based on flip-plate mechanism. The project can be installed at highways where a huge number of vehicles pass

daily, thus resulting in more amount of electricity generated. This generated electricity can be utilized for different types of applications and mainly for street lighting, on road battery charging units and many domestic applications like air conditioning, lighting, heating, etc.

