

GREEN ENERGY GENERATION BY MOVING VEHICLE

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ABSTRACT

In this project we explain about new invention and new process of generated electricity. The wind energy produced by moving vehicles is wasted, we used these wind to generate the electrical energy because these wind are the uncontrolled wind. These wind is flow opposite to the moving vehicle which bumped into blades of the turbine, spin the shaft connected to it. The shaft is also connected to the alternator, kinetic energy is generated which is used to generated electricity. Wind energy is the renewable energy resource which are used in the form of wind power, wind energy is depend on the location and climate location. The second option of our project to generate electricity is solar panel. This option can increase the efficiency of our project.

These energy are stored on the battery by the help of alternator, which convert the mechanical energy into electrical energy. Alternator are connected to the turbine shaft which are rotated to rotation of blades. A normal wind can also be useful for the rotation of blades that rotate the turbine blade. When the vehicle is moved with high velocity, the uncontrolled wind also generated with high velocity and bumped into the blade of turbine can increase the high amount of electricity. India is the high populated country where no. of vehicles are run on the road in a day. These vehicle generated the high amount of electricity. The electricity generated by these vehicle are eco-friendly and free. Solar energy is also a renewable energy. Which are worked on the solar panel that absorb the heat energy from the sun and convert into electrical energy. These method is not useful all well because the climate condition can effect the sun radiation and less heat energy due to which absorption of heat energy is less and also less amount of electrical energy generated. This project is a more interesting and imagination project that can change the whole world thinking and the can be utilise as more as nature without harm the natural substances.

KEYWORDS: Green Energy, Renewable Energy, Wind Turbine, Physical Foundation, Usable Power Etc.

I. INTRODUCTION

In this topic are to uses about nature with respect to save our environment. In this time more and more energy is required for daily consumption of electricity. Uses of fossil energy are uses day by day and getting exhausted at a very fast rate. By this project can decrease the uses of fossil fuel and these can decrease the level of pollution. India has the pollution level is high to decrease the level of pollution that project can help in a few amount. The all world have the main problem is the pollution that are effect the climate condition and harm the human beings. The present concept is one of the answers to this problem, the induced wind energy into useable electric energy which can be utilized on Light Street or stored in batteries. According to that can be wind energy is a renewable energy resource which makes use of wind velocity. The wind velocity is dependent on the climate condition and geographical location. This project operate on the moving vehicle that there waste wind can be used. Where the moving vehicle is moved at a high speed and the direction of move such oppose the wind in an opposite direction, reflected wind can convert to the electrical energy by the using of wind turbine and these are attached to the turbine shaft, shaft are also rotated and they connected to the alternator shaft by the gear and chain method to convert the electrical energy on the highway.

This project are the concept for the electricity on the highway because on this way need electricity is more and due to decrease the accidental level on highway is less in night. Light is very useful for our life that can help to seen an object at night. On the highway these are very important because the many accident on the highway is due to the night, in night time seen the road is very difficult and in the vehicle problem of head light or parking light these project can help to seen other people on the highways due to street lamp. The power house is also

establish on highway for the rest amount of electricity is stored and these work like a helping booth on the highway to help the person.

Energy Requirement:-

World first level energy demand grows by 1.6% per year on an average between 2006 and 45% increase in 2030. Demand for oil, rises from 85 mb/day now to 106 mb/d in 2030. In 10 mb/d oil is less in projected last year. Modern renewable energies grow most rapidly, gas to become the second largest source of electricity soon after 2010. Which increased environmental affect, and approaching limits to fossil fuel consumption. Wind power has regained interest as a renewable energy source. This new generations of wind mills produce electrical power and are more generally used for all applications, which require electricity on the highway.

II. HISTORY

The wind energy was used for boats sailing in the Nile river around 5000BC. The wind energy was used for windmill around 200BC in China. The windmills were used for food production extensively in the middle-east by 11th century. The use of wind energy for electricity generation started in the 19th century. Statistic of the wind power capacity in the world is listed in Table 1. These data are taken from global wind statistics 2019 provided by global wind energy council. Wind energy capability of India is 31088 MW at the end of 2019.

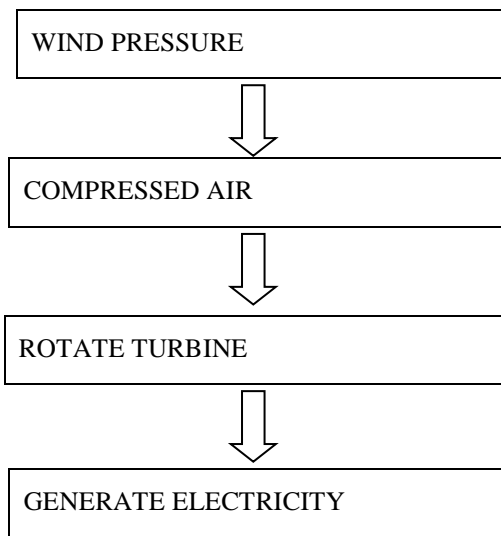
Region	Capacity At The End Of (2019)
Africa And Middle East	3489 MW
Asia	175673 MW
Europe	157771MW
Latin America And Caribbean	12240 MW
North America	88744 MW
Pacific Region	5122 MW

TABLE-1: Global Installed Wind Power Capacity

III. IDEA

- The fixed wind powered electricity generation systems in use, till now are dependent on wind direction and the force of the wind. The need of a system for generating electricity from wind induced by moving vehicles, trains or airplanes, which is available throughout the year at various place and with sufficient force of wind. This invention provides a solution to the problem for generating electricity.
- This invention relates to a new method for generating electricity using high wind pressure generated by fast moving vehicles is bumped the induced wind in the direction of the wind turbine. A fast moving vehicle compresses the air in the front of it and reflect the air from its sides thereby creating a vacuum at its side.

IV. DISCIPTION INVANTION



V. METHODOLOGY

5.1 Wind Power Technology:

A wind energy system consists of turbine, generator, and control system. The wind turbine is classified in two categories (i) fixed speed wind turbine and (ii) variable speed wind turbine.

5.2 Battery Storage Technology:

There are three main energy storage technology:-

- 1) Mechanical energy storage
- 2) Electromagnetic energy storage
- 3) Electrochemical energy storage

1) Mechanical Energy Storage:-Mechanical energy storage are hydro storage, compressed air storage, flywheels, etc.

2) Electromagnetic Energy Storage:-It is a Superconducting magnetic energy storage system. These system are stored in a form of magnetic field by the flow of current in a superconducting coil. The superconducting critical temperature is high to its superconducting coil.

3) Electrochemical Energy Storage:-Electrochemical energy storage are stored the energy by their chemical methods, these battery are super-capacitor, ultra-battery, lead-acid battery, nickel-cadmium battery, lithium-ion battery, etc.

The seven technologies are:-

- 1) Lead-acid
- 2) Nickel-cadmium
- 3) Nickel-metal hydride
- 4) Nickel-zinc
- 5) Nickel-hydrogen
- 6) Super-capacitor
- 7) Lithium-ion

The selection process for a good battery technology is based on six criteria:-

- (i) Size
- (ii) Efficiency
- (iii) Lifetime
- (iv) Cost per kWh
- (v) Environment
- (vi) Self-discharge rate.

5.3 Blades:

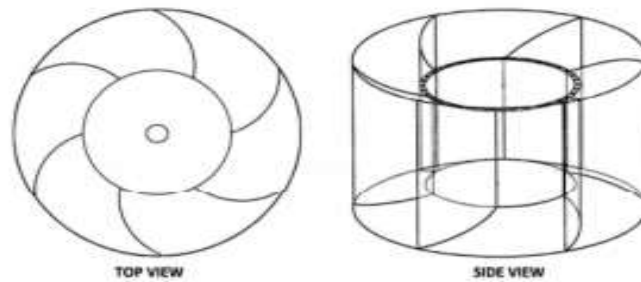


Fig-1

The velocity of the wind which are generated by the moving vehicle can be strike on the blades, it can rotate on their axis and produce the kinetic energy. These energy can be convert into the electrical energy by the alternator.

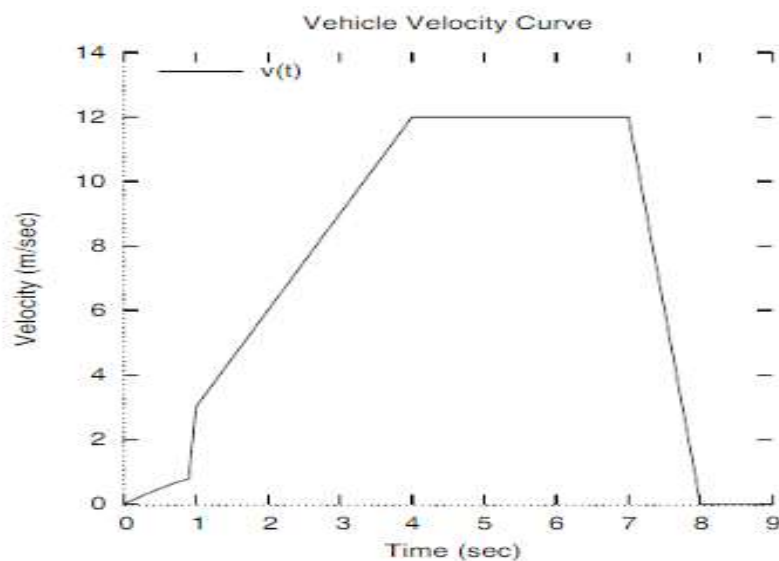


Fig-2: Vehicle Velocity Curve

5.4 Solar Energy:

Solar energy can convert the solar energy into the electrical energy. Solar energy is the photovoltaic technology that are used to change the heat energy into electrical energy. It means we use the energy of sun as to high because it is an unlimited source of energy. The photovoltaic technology use light energy from the sun to produce electric energy through the photovoltaic effect. In the photovoltaic technology are made up of silicon cells and thin film wire. These wire are covered by a glass which protect from mechanical damages and moisture of cells. This cell are connected with each other in a series pattern, all the absorption of light energy are converted into electrical and stored into electrical energy in a battery. The wattage of the one by one block

is the mathematical product of the voltage and the amperage of the block. On average modern photovoltaic solar panels will produce 8 - 10 watts per square foot of solar panel area.



Fig-3

5.5 Bevel Gear: In this gear system is used to transmit angular power one place to another at 90^0 .

5.6 Gear System: Use the sliding compound gear system is to take the all capability of power and increase the efficiency.

VI. ANALYSIS

To invention of a wind turbine at the highway are to produce power by means of rotation of turbine which are generated by the vehicle speed and trying to utilize the power which is produce by the turbine blade with the help of vehicle and wind turbine on divider. These power are used for street lighting on the highway. The produced power is generated form mechanical energy into electrical energy and these power are stored in a battery, so its convert into DC. Only DC current can be saved on the battery. It's the property of battery. So it convert AC current to DC current and stored on the battery cell.

VII. DISCUSSION

In the project be discussed on the highway detail that are to be very careful because on the highway these are not available proper light that the reason is increase the accidents on highways. These proper light is not available due to govt. also increased their cost for them. Our group member is to decide that problem to solve it. So be consider that project.

VIII. CONCLUSION

In this project can help to use the fossil fuel in a less amount. Fossil fuel is effect the environment and also harm our society to breathe a fresh air. In that we used the renewable energy to use and form an eco-system also work are to be done. Reuse of human being and the composting of human and animals and other organic waste are being used in cultivating plants and trees. Given technique provides generation of green power (5.8KW/month) along with a useful by-product. Apart from these, method producing of vehicle is less and in this process can be used less amount of fuelling vehicles, which reduces the dependent on crude oil. It also balances the ecosystem in power because of spurt in population. The technology is expected to contribute to the cause of the environment as it helps to reduce carbon emissions and also assists the government in saving on fuel.

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