

# Future Green Car

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## ABSTRACT

The requirement for the car is not hidden in today's world. Due to the need for luxurious life, the requirement for the car is increasing every day. But the major problem everyone is facing is about the hike of petrol and diesel there is a huge amount of increase in their rate in last decade. Now comes the requirement of the future green car. Future green cars have lots of advantages in comparison to the car which is on market nowadays. Its biggest advantage is it is pollution-free. It does not produce any kind of pollution. And one more advantage is getting rid of petrol and diesel requirements.

## 1. INTRODUCTION

The demand for the production of energy is increasing day by day. And also easily available natural resources are been checked. As it is known to everyone that energy can neither be created nor destroyed[3] it can be converted from one form to another form as per the Law of conservation of energy. So, the basic principle of this future green car is that only it tries to generate energy from various available sources. The biggest advantage of it is that all the energy sources are natural and renewable. It converts four forms of energy to another form.

The first one is Solar energy. Solar energy is the low-cost form of energy available in our nature. In its solar radiation falls on solar panel and with the help of proper connection that energy is stored in the battery[1].

The second form of energy is wind energy. When a car is moving it generally runs at a good speed mostly more than 40 kilometers per hour which is a good amount of speed[2]. So, in it, a fan is instructed which is working as a windmill in it. With the help of a motor that wind energy is converted into electrical energy. And that energy is stored in a battery.

The third form of energy is shock energy. This technology is a little bit new no more research has been done on it. It has been seen that when a car moves a lot of energy is stored in the shocker. Which is not used effectively. In shocker lot of potential energy is stored when shocker comes into work. So, a proper mechanism is made by which the potential energy stored in the shocker car be used as a source of energy for running the car. So, it is the third form of energy in this future green car.

The last one is sound energy it has been seen that there has been a lot of noise pollution. So why not effectively use that sound pollution[4]. By which it can be converted into electrical energy which can be converted. So, it is also one of the forms of producing energy in this future green car.



Fig. 1. Solar car

In today's time most of the companies which are established generally things about solar energy only. Yes, solar energy can produce a good amount of energy but it can be established in a large area but in the car, it cannot provide that amount of area by which such amount of energy can be produced[5]. That is why alternate energy source has to be searched to make full filament of the requirement of energy.

## 2.1-Solar energy

In today's world solar energy is one of the best natural resources available. The best advantage of it is that the natural resource for generating solar energy is the sun[5].

So that's why the government is also focusing to use solar energy as much as possible. The basic principle which works in it is the semiconductor material that is used. Generally, for producing solar energy a solar panel is required. That solar panel is made of silicone-type material.

The solar power system is harnessed with the help of the photovoltaic method which generally converts the energy from the sun which is solar radiation to electricity with the help of semiconductor material[6]. When solar radiation strikes the PV cell, then a lot of electrons are emitted. And when the emission of electron or streak of electron flows then there is a flow of electron. Then those electrons or electrical energy is stored in the battery which is connected to the load.



Fig.2.Solar panel with solar battery

So, it is the best source of energy available and easily available. But the only limitation of it that it required a quite large area to generate the actual requirement of energy with is required to run a car.

And in the time of rainy sessions and winter sessions, the times come when the sun is not visible due to clouds and fog. At that time also a large amount of shortage of power will be there. At that time there is no sun available in the sky so there is no generation of power.

One more problem related to the solar energy system is the direction of the sun and solar panels. The angle which is forming between solar panel and sun. There should be the maximum amount of sun rays falling on the solar panel[7].

But the problem is that in-car cannot provide such large area for solar Panel so it is the one of the most common reason so cars are not in as per demand there is the shortage of power in it. To overcome that problem that's why switch to other natural sources of energy.

But solar energy system contributes a large portion of power generation and cannot neglect. So, it is one of the natural sources of energy by which cars can run.

## **2.2-Shock Absorb-er Energy**

It is one of the most interesting and new topics and not much discussed. As our all the vehicle are having a good amount of weight. Due to this thereof pressure formed in the shocker which is a very huge amount. So there should be a method that helps us to use that pressure in a good way. That is why a method is a maid that will help us to use this energy and not get wasted.

So in shock absorb-er, a motor is connected that will move when any breaker or any other obstacle will come there will be a lot of pressure formed due to which motor starts moving and electric energy will be formed. Then this electrical energy will be stored in the battery. And it can be used when required.

This energy produced by the shock absorber is having a very high amount of intensity. If it is used effectively then a large amount of energy requirement can be met.

## **2.3-Sound energy**

Sound energy is the energy that is in the form of kinetic or mechanical energy that living organisms can easily hear. It is a form of energy generated from vibrations. It is formed or produced when an external force vibrates any object.

The sound energy is converted into electrical energy and later on, it's again converted from electrical energy to sound energy. For example, when someone speaks in a microphone it converts its voice into electrical signals and transfers it to the speaker via a wired connection. On the receiving side or in the speaker the electrical signals are again converted into sound so that the listeners can easily listen to it and react to it[8].

In the future green car, the sound is used as an energy source or supply to our battery. In this project sound or noise in the environment is sensed via a speaker which converts the noise or sound into electrical energy. The speaker is 10 watts and 8ohm. Then there is a red light that is connected in between the microphone and the transformer starts to blink showing that the input supply is coming via the microphone. Later the transformer uses the input supply coming from the microphone to charge the 12-volt battery which supplies the vehicle. Here the transformer plays an important role due to which the 12-volt battery also acts as an inverter. After the input supply comes from the microphone the transformer starts to charge the 12-volt battery. After charging the battery this vehicle can run easily without any discomfort. Here the 12-volt battery can be easily replaceable with ac supply but it only increases its cost and for a successful innovation or project the cost must be as minimum as possible.

Future green car runs on the road so there is probably a chance that sound is available or present in a nearby area and this vehicle converts the sound into electrical energy through which the 12- volt battery will get supplied[9]. On the busy road or in high traffic people starts to blow their horn which creates a lot of noise at that time this vehicle use that noise as a supply to charge the battery. This shows that the noise can be used by people running that vehicle. In the speaker, there is a disc magnet present in which the coil starts to move in forward and backward directions between the space present in the magnet which generates electricity for running this vehicle.

## **2.4-Wind energy**

In wind energy wind turbines are used to generate electric or mechanical power. The turbines convert the kinetic energy into electrical energy without using any additional fuel. Wind energy is a renewable energy resource that can be used domestically for generating electricity in plain areas. The main advantage of wind energy is that its maintenance cost is low and at a low investment it provides a better result. Wind energy is a reliable source of energy and it doesn't require a short time of maintenance[10]. Wind energy is variable because during the low flow of wind the turbines are not able to generate that much power. To overcome this motor can be connected to the wind turbines which helps the turbines to rotate during the low flow of wind.

In this model, a fan is attached at the end of the vehicle which helps in generating input supply to the 12-volt battery. In the future green cars the led light is used as an indicator which shows from which energy method the battery is charging. When the vehicle is running the turbine starts to rotate and provide a power supply which can be seen when the led starts to blink after that the transformer act as both steps up and step down and charge the 12-volt battery. The transformer act according to the polarity of the connection during charging the transformer act as a step up and increase the low amount of power supply to a high amount to charge the battery. Later the battery helps in rotating the motor and helps in moving the car. Wind energy is a conventional energy resource which means it can be used for a long period without any degradation of it.



Fig.3.Wind energy and solar energy

## 2. Proposed Future Green Car

In it, energy is generated by four sources. The first one is solar, for it, will have used a solar panel that is connected to a diode so that current flow in one direction only. After it

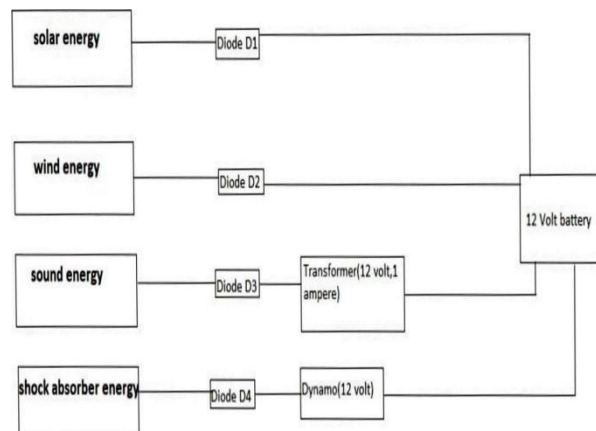


Fig.4.circuit diagram of energy storage by the battery

there are four indicator which has been used for all four sources. Then that energy is stored in the battery. The second one is the energy produced by the shocker. In it whenever there is a use of shocker in any case then there is compression and expansion of the shocker. So a motor is connected to convert that energy to electrical energy.

The third one is wind energy, whenever a car will move, there is a fan placed at the top of the car which will move. There a motor is connected which will convert that electrical wind energy to electrical energy and then that energy is stored in the battery.

The final one is the sound energy, in it, a speaker is used whenever it receives a sound there is a coil inside it moves. So due to Faraday's law of electromagnetism, a voltage is produced. But the level of that voltage is low so there a step-up transformer is used that will increase the voltage level then all that energy is stored in the battery. In it also the same indicator is used led that will indicate whether energy is getting produced or not.

In it there two switches are used, first one is for on and off the purpose of the car. The second one is for moving forward cars. And the last one or the third one is for moving backward the car.

To move the wheel BO motors are used as they are lighter and use less power. Energy is given to their motor to run the car.

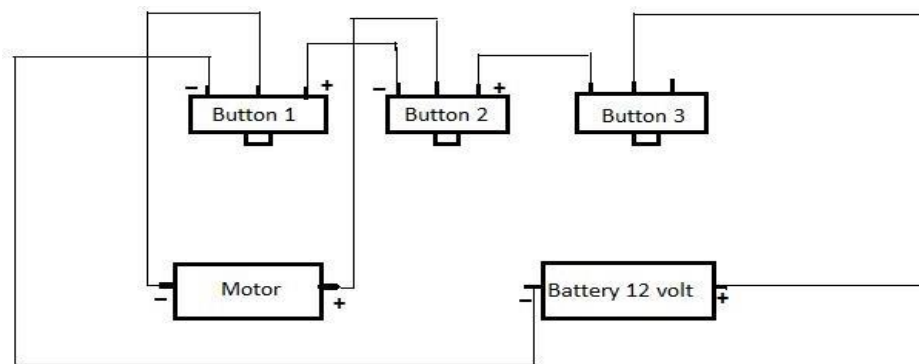


Fig.5. Working of switches





Fig.6.Future green car model

#### 4.Comparison Table Heading

General vehicle running with fuel.	Future green car
Its main fuel is petrol and diesel.	Its main fuel is not sun, wind, sound, and shocker.
It produce pollution.	It does not produces pollution.
It only depends on one source of energy.	It depends on multiple sources of energy.
These vehicle numbers will decrease as time passes.	These vehicles which are using naturalresources are going to be the future ofeveryone.
They are practiced now a day's.	In the future, these kinds of wheels will bemore in practice.
Indirectly government is trying to reduce their usage slowly.	The Government is taking steps to increasethese kinds of the vehicle number.



### 3-Conclusion

In this project, an idea is given that would help us to overcome the shortage of power in the vehicle that is not using petrol and diesel. Surely these types of cars are going to fulfill the requirement of the future generation.

IT is almost confirmed that our future generation is not going to get the same fuel our the natural resources which are getting. These resources are going to vanish one day.

They have to see the alternative and it is one of the best alternatives for our future generation.

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