ISSN No: 2348-4845
International Journal & Magazine of Engineering, Technology, Management and Research
A Peer Reviewed Open Access International Journal

Utilize of Solar and Wind Energy for Vehicles

Chandrashekar Goud V
Department of Mechanical Engineering,
Aurora's Scientific Technological & Research Academy, Hyderabad, Telangana, India.

Ravinder.S
Department of Mechanical Engineering,
BVRIT College,
Hyderabad, Telangana, India.

ABSTRACT:

There are various sources of energy, out of them wind and solar energy plays very important role for vehicles to run the small vehicles for lighting purpose and for charging the batteries etc. which can be further used for charging mobiles etc.

Keyword:

Wind Energy, Solar Energy, Vehicles.

1. INTRODUCTION:

As there are various sources of energy, out of them wind and solar energy plays very important role for vehicles to run the small vehicles for lighting purpose and for charging the batteries etc. which can be further used for charging mobiles etc. this principle of using the wind and solar energy saves the fuel up to some extent. Wind energy is the kinetic energy associated with the movement of atmospheric air (wind).Wind is free, clean, and inexhaustible energy source. It has been used for hundreds of years for sailing, grinding grain, and for irrigation. Wind energy systems convert this kinetic energy to more useful forms of power. Wind energy systems for irrigation and milling have been in use since ancient times and since the beginning of the 20th century. It is being used to generate electric power.

The generation of wind energy has been increasing rapidly and has become cost competitive with other means of generation. The power generated from wind turbine is always fluctuating due to environmental conditions. The wind power generated from wind turbine is expected to be a promising alternative energy source which can bring new challenges[1]. The kinetic energy of the wind is being absorbed by the rotor which constitutes blades which are mechanically coupled to the alternator. There are three types of alternator technologies to interface with wind turbine.

1. Conventional wound rotor or squirrel cage induction machines. These are supplemented by capacitors to supply reactive power needs.

2.Doubly fed wound rotor induction machines which employ power converters to control the rotor current to provide reactive power support and control.

3.Non-power frequency generation that requires an inverter or converter interface.

Energy is a vital need in all aspects and increasing demands for energy is not sufficient for basic requirement. Therefore, human being is looking for renewable source of energy such as solar energy, geothermal energy, and wind energy. Humans have always used the Solar energy is the radiation produced by nuclear fusion reactions in the core of the sun. This radiation travels to earth through space in the form of energy called photons. Solar energy collectors are special kind of heat exchangers that transform solar radiation energy to internal energy of the transport medium. The major component of any solar system is the solar plate collector. This is a device which absorbs the incoming solar radiation converts it into heat, and transfers this heat to a fluid (usually air, water, or oil) flowing through the collector. The solar energy thus collected is carried from the circulating fluid either directly to the hot water or space conditioning equipment or to a thermal energy storage tank from which can be drawn for use at night and/or cloudy days. Solar collector may be classified according to their collecting characteristics, and the way in which they are mounted and depends on the type of working fluid which is employed into the collector. A collector generally uses liquid or a gas as working medium to transfer heat. The most common liquids are water or a water-ethylene glycol solution.

SOLAR CAR:

Solar cars are different only in the fuel that makes them run. are called solar energy cars for the reason that they use sunlight for fuel.

ISSN No: 2348-4845
International Journal & Magazine of Engineering, Technology, Management and Research
A Peer Reviewed Open Access International Journal

Of course in a specific way they look very different from the common conception of a car.More recently though the exposure that environmental advocacy groups and the popular media has familiarized the general public to the solar car.The concept of driving a car with zero harmful emissions, one that is very quiet and is very low maintenance, and does not need an expensive fuel source has been the ideal of many inventors for a long time.

Advantages of Solar Powered Cars:

•Unlike regular cars, solar energy powered cars are able to utilize their full power at any speed.
• Solar powered cars do not require any expense for running.
• Solar cars are quite.
• Solar cars require very low maintenance.
• Solar cars produce no harmful emissions.

These were some advantages of solar powered cars.

Disadvantages of Solar Powered Cars:

• Solar cars don't have speed or power that regular cars have.

• Solar powered cars can operate only for limited distances is there is no sun

• If it is dark out for many days, the car battery will not charge and you this can seem as a problem to many problem. This is the main reason why people don't rely on solar cars.

• A good solar powered car is expensive. It will cost $200,000 or more.

• Parts used in solar cars are not produced in large quantity so they are expensive.

DESIGN:
1. WIND ENERGY

a)The small fan can be used to on front side of vehicles which will generate the wind energy into mechanical energy.
b)The mechanical energy can be converted into electric energy by using dynamos, etc.
c)The converted energy can be stored in batteries and can be used as and when required. d) This energy is effective for head lights, charging mobiles, etc.
e) Even the same principle can also be used for helmets along with one fan and one or two
headlight fitted in the helmets.
f)The other arrangements required to convert the energy can be made in separate dickey.

2. SOLAR ENERGY:

a)Small solar panels can be used for vehicles.
b)The solar energy stored can be used to effectively for head lights, charging mobiles, etc.
c)The small solar energy panels can be used for bike helmets and can be used for charging the mobiles etc.

CONCLUSION:

The use of solar and wind energy saves the fuel and can be used effectively for vehicles.

REFERENCES:

[1] B.Sivaprasad, O.Felix, K.Suresh, G.Pradeep Kumar Reddy And E.Mahesh, "A New Control Methods for Offshore Grid Connected Wind Energy Conversion System using Doubly Fed- Induction Generator and Z-Source Inverter", International Journal of Electrical Engineering & Technology (IJEET), Volume 4, Issue 2, 2013, pp. 305 - 323, ISSN Print: 0976-6545, ISSN Online: 0976-6553.

[2]Ganni Gowtham, Ksitij Kumar, S.S Charan and K Manivannan, "Experimental Analysis ofSolar Powered Ventilation Coupled with Thermo Electric Generator on Unroofed Parked Vehicles", International Journal of Mechanical Engineering & Technology (IJMET), Volume 3, Issue 3, 2012, pp. 471 - 482, ISSN Print: 0976 – 6340, ISSN Online: 0976 – 6359.