

# Solar Hybrid Generating System Using Wind Turbine

Assistant professor, Students  
Dept. of Electrical engineering, Hingna Road, Nagpur-440016

**Abstract-** Among the race in the countries of the world, Energy consumption and power requirement is one of the most vital thing in the world. Due to increase in power consumption, conventional energy resources depleting day by day. Owing to considering this and also issue of global warming and pollution, importance of the nonconventional energy resources is increasing. Also there is need of clean and continuous supply of power. Hybrid energy system using wind turbine and solar energy gives uninterrupted power. The electrical power from such a system can be used for various purpose. The paper deals with generation of electricity using wind turbine and solar panel at affordable cost without disturbing balance in nature.

## INTRODUCTION

Now in today's world scenario competition between the various countries is growing enormously. This leads to increase in consumption of fossil fuels at very fast rate. One day this nonrenewable energy resource will deplete and also increases pollution problem. So far the electricity is generated using steam energy. The steam is generated using various fossil fuel such as coal, diesel, natural gas and also using nuclear energy but due to the various problem such as handling of hazardous nuclear waste, ash handling is increases and also it is very costly. So considering all this, we have to find another energy resource which gives us continuous and pollution free supply of energy. There are many nonrenewable energy resources and among this solar and wind energy resource are good one. The solar energy intercepted by earth is about  $1.85 \times 10^{11}$  MW. Solar panel installed are quite ineffective in cloudy and rainy season, so integration of wind and solar energy use continuous energy throughout the season. So such hybrid system can give us continuous supply of energy in a good weather condition and in efficient way.

## HYBRID POWER GENERATION SYSTEM:-

Hybrid power generation system is the combination of two energy resources. It overcome the limitation of individual

system and produces power continuously. In this proposed system solar and wind energy are combined to take advantage of their seasonal dependency. Such a system could give reliable, pollution free power supply at low cost.

## SOLAR ENERGY:-

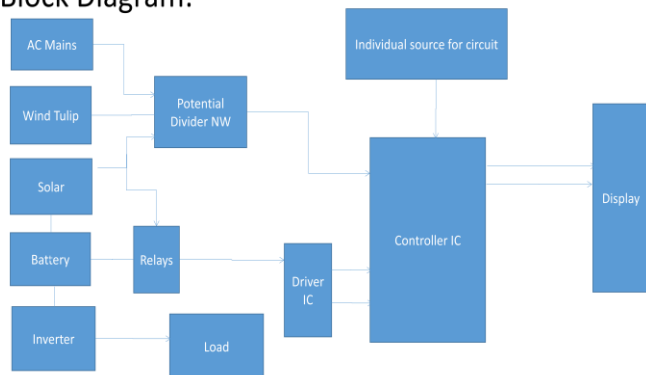
The energy produced in the sun is due to nuclear fusion. During the fusion large quantum of energy is releases and reach the earth surface in the form of electromagnetic radiation. Solar energy available on earth is in abundant manner and throughout the year. Solar energy is freely available. This energy is available at low cost and without pollution. Solar energy has high efficiency and very low maintenance cost makes it suitable for the hybrid system for power generation. Solar energy is easily available on everywhere. It has no effect on nature and is a part of our eco system.

## WIND ENERGY:-

Wind energy is indirect form of solar energy since wind is introduced chiefly by the uneven heating of earth's crust by the sun. However the power generation is mostly depend on wind speed available. Advantage of wind energy is that it is clean and non polluting.

The only limitation of using individual system is that it does not give power in all weather condition since many times wind is not available and same is for solar energy. By taking into account all this matter in our proposed system we use both solar energy and wind energy especially vertical axis wind turbine. Such a hybrid system can be used as standalone or in grid system. Through the capital cost is high for such system, but standalone system can be produced at low cost. The main advantage of such system is its high efficiency and continuous power supply

**Block Diagram:**



**FUTURE SCOPE**

In future more sophisticated and less power consuming hybrid system can handle more loads for colleges and industries. In India more solar energy is received from the sun and the full energy is not utilized for generation of power. In future, using solar panel and wind generator for all domestic, colleges and industrial the more energy can be received from the hybrid system and energy requirement from the government can be reduced So the non-renewable energy sources usages are minimized. Moreover it can be implemented in electric vehicle.

**REFERENCES**

*Research paper of 2013 International conference on renewable energy research and applications (ICRERA) conducted by IEEE (Institute of electrical and electronics Engineers).*

*www.engineergarage.com*

*www.google.com*

*www.Wikipedia.com*

*A review of hybrid solar PV and wind energy system.*