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POWER GENERATION THROUGH WIND CREATED BY MOVING TRAIN

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Abstract: *Many areas aren't windy and having intermittency behaviour of wind is one of the big obstacle to the world wide application of wind power generation .This paper attempts to explain the method of generating energy through moving train by using windmill .The method for generating electricity is by tapping wind pressure generated by moving train through windmill .The turbine converts wind energy into mechanical energy and this mechanical energy is converted into electrical energy by using generating device. It will be helpful to fulfil the increasing demand of electricity.*

Keyword *: - Renewable energy, wind turbines, wind.*

INTRODUCTION

In developing countries energy requirement is increasing tremendously. The three basic needs of human are shelter, cloth and food. Demand of electricity rises up day by day. So we can say that electricity will become fourth important basic need of human. Electricity performs a crucial role in domestic as well as industrial application, without electricity life become somewhat cumbersome. Nowadays electricity generation is mainly through conventional sources like fossil fuels, petroleum etc. But they are on the way of depletion because of huge use of energy source in different areas .Therefore to make human life comfortable electricity generation through nonconventional sources is the main invention for future. The present system is the best option for this problem. As stated that mechanical energy (wind) converted into electrical energy and stored in battery as DC power. Inverter converts DC to AC for various AC applications.

LITERATURE SUREY

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For power generation. At present the greatest widespread solution of wind power generation in the world is based on the turbines. With the importance of alternative energy sources increasing, monitoring & economical design of alternative energy generators becomes more critical. To implement a practical monitoring system, characterization of the dynamic behavior of the structure under consideration is a necessary first step. Acquisition of dynamic output data under a wide variety of condition can be a time consuming & costly process. In recent years, low cost wireless sensors have emerged as an enabling technology for just such monitoring application. In this paper wireless sensor technologies are deployed on two wind turbine structures to provide better models of wind turbine dynamic behavior& response to loading. Also this paper deals with power control of a wind generation system for interconnection operation with electric distribution system. Power control strategy is to extract the maximum energy available from varying condition of wind speed while maintaining power quality at a satisfactory level. In order to capture the maximum power, variable speed, voltage control is employed for turbine system. The grid interface inverter transfers the energy drown from the wind turbine into grid by keeping common DC voltage constant. It provide uninterrupted power, effective utilization of source, improves life time of battery & minimized usage of diesel. This paper present viability study of integrated renewable power system for telecommunication application. .

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In modern time, wind power technology has been growing widely. With the incorporation of Wind turbines together with the electrical grid, it is necessary for the system operators to know the behavior of wind turbine under all the operating Many areas of interest in the power system such as calculation of wind speed, modeling, control and stability analysis of the wind system connected with electric grids are of importance in the modern power system. The problem

related to the various effects of wind energy when integrated with the power system on the stability of the system is gaining more interest of researchers because of increasing of its penetration level.

SYSTEM DESIGN

Following are the main components required for the project;

- Microcontroller
- Dynamo
- Wind Turbine
- LED
- LCD Display
- Inverter
- DC Motor

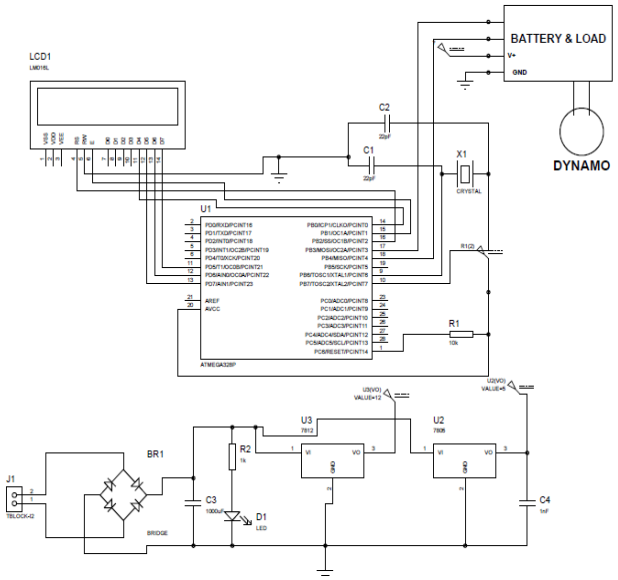

FIG.Schematic diagram

Our work consists of following sections for measurement of current and voltage

1. Capturing and routing wind induced by moving vehicles.

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The running train produces the unique alternative form of energy which does not depends on any natural resources.

Sufficient amount of electricity can be generated by directing the wind properly towards turbine. The requireddirection or channelling of the wind can be obtained by one truncated cone or pyramid shaped housing convergingtowards the blades of the wind turbine.

2. Converting wind energy into electrical energy

A. Converting kinetic energy of wind to mechanical energyBlade is a rotating component. It converts kinetic energy into mechanical energy. Blade is designaerodynamically to work on the principle of lift and drag to convert kinetic energy of wind into mechanical energythrough shaft. There are two important reasons why wind turbine blades are able to spin in the wind: Newton‟sThird Law and the Bemoulli Effect.

B. Converting mechanical energy into electrical energy

Generator is the unit of wind turbine that converts mechanical energy into electrical energy. Generator is thenext state in the supply of energy from the wind turbine to the electrical grid. Wind turbine may be connected to anelectricity generator. The generated electricity may be stored in batteries. From which energy may be used as perapplication. These turbines have been design to small power unit like providing electricity to controlling the railway stationed L. T. consumer.

CONCLUSION

There are huge potential for producing electricity from renewable sources. The achievement so far is about10406.69 MW, as against global installed capacity of approximately 200000 MW of renewable electricity generation.In this method the whole unit can be supplied with electricity for railway station lighting, fans etc.

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