STUDY OF MOBILE POWER BANK USING

SMALL HORIZONTAL AXIS WIND TURBINE (HAWT)

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ABSTRACT

This paper presents the study of mobile power bank using small wind generator adapted from the Horizontal-axis Wind Turbine (HAWT) characteristics. This project use wind energy produced by a moving car with different speeds as their main source to charge power bank whereby the source is a part of Renewable Energy (RE). This paper will show how the kinetic energy produced by the wind energy passed through the small wind generator to supply power source for the power bank to be charged. The objective of this study is to develop power bank with the exist of wind energy as its main source and to study the Horizontal-axis Wind Turbine (HAWT) characteristics on Direct Current (DC) fan used to generate power. Also, to construct the realibility of the Nickel-Metal Hydride (NiMH) battery type used to store power in terms of electrical power. The scope of study for this project is to develop a power bank using Horizontal-axis Wind Turbine (HAWT) characteristic with source of wind energy by a moving vehicle . The expected finding is amount of power needed to be stored at the rechargeable battery. The expectation of the project is to maintain the system with a sufficient reliability, very useful and security is not to be ignored.

Keyword - Renewable energy (RE), Kinetic energy, Horizontally-axis wind Turbine (HAWT), Nickel-Metal Hydride (NiMH), Direct Current (DC), wind energy, wind generator.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Renewable energy (RE) is the energy that comes from the natural resources which can be used to generate electric energy. There are several types of RE available in this world such as wind, solar, biomass, and also wave. These renewable energy are the alternative energy to the world users as they can helps to overcome the problem in lacking raw materials and sources that our world are facing nowadays. In addition, these energy cannot be exhausted and is constantly renewed The perspective of renewable energy is to make strategies for sustaining the development of energy sources and energy savings on the demand side which can help to minimize the cost of supplying electric power as this energy is a free source. Consequently, large-scale renewable energy implementation plans must include strategies for integrating renewable sources in coherent energy systems influenced by energy savings and efficiency measures. [1]. As in Malaysia, most of energy generation are currently looking for another alternative resources to generate electricity after so long