SIZING OF PV GENERATOR SET SYSTEM

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May Allah Bless Us,

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Abstract

The Sizing of PV Generator Set System works aim is to outline the features and design aspects of PV Hybrid system. The sizing presents the method that proposed by Sandia National Laboratory. The design based on existing system which is a shelter that located nearby the Language Center in UiTM. The purpose of designing this system is to test the result from the calculation with the actual design that has already being run.

A methodology has been chosen to provide electricity to that shelter. The methodology is based on calculation the suitability of the system using the hybrid system and the value of the battery and the PV module that will be used in the system. The main power for this system is from the PV module and the generator is used as a backup. The battery is used to restore the electricity that has been produce by the PV module and the generator. This is a system that doesn't used grid connection to run the load demand.

CHAPTER 1

INTRODUCTION

1.1.OVERVIEW

Most of rural area in developing country in this world didn't get access of electricity. More than 1.6 billion people in this world didn't get the electricity which most of them are in off-grid power generation [1]. Renewable energy is an alternative way for people in rural area to get the electricity. Application of photovoltaic (PV) as a renewable energy technologies (RETs) for is gaining popularity in recent years. A PV system alone may not easily satisfy loads on 24-h basis as the variation of solar electricity generation does not always match with the time distribution of load demand. Stand alone PV systems do not produce usable energy for a considerable portion of time during the year [2].

A hybrid system is a combination of one or more resources of renewable energy such as solar, wind and biomass with other technologies such as batteries and diesel generator. Particularly, the PV hybrid system developed with a combination of PV with battery and diesel generator [3]. As an off-grid power generation, the hybrid system offers clean and efficient power that will in many cases be more cost-effective than single diesel systems. As a result, renewable energy options have increasingly become the preferred solution for off-grid power generation.