**KANO STATE POLYTECHNIC**

**SCHOOL OF TECHNOLOGY**

**DEPARTMENT OF COMPUTER ENGINEERING TECHNOLOGY**

**PROJECT PROPOSAL**

**TOPIC:**

**CONSTRUCTION AND ASSEMBLY OF A SOLAR SYSTEM**

***SUBMITTED TO*:**

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**Abstract**

*The project was provided on how to cure the scarcity of an electricit.but now life brought some changing, among the change include the conversion of sunlight to form electrical power (electrical),using photo voltaic or indirectly concentrated power(CSP).the photo voltaic convert light energy to electrical current using photo effect which we have explain after. We notice some researches issues based on solar system, but this one brought some addition which we explain it after. Solar PV Module: The sunlight (solar radiation) falling on the modules is converted in to DC energy by photovoltaic principle, in Nigeria interrupted power supply is serious issues which make life difficult and unbearable because people on earth, firms, industries, churches, shopping malls, school, and even business center etc,faces such problem in daily activities. The idea of the project is to assemble or construct a new solar system which we wish to be a legacy to young ones. The project work covers the selection of solar charge controller, battery and inter-connectors (cables) based on the requirement of the system, design analysis of the solar panels, the economics analysis (bills of engineering measurement and evaluation), and testing and experimentation of the system, the solar system diagram implemented.*

**Introduction**

## Background of the Problem

Solar technology is not new. Its history spans from the 7th century B.C today. We started out concentrating the sun’s heat with glass and mirrors to light fires, today we have everything from solar – power buildings to solar power here you can learn more about the milestones in the historical development of solar technology century – by century and year by year.

This project involves the conversion of sunlight into electric power (electrical) directly using the Photo Voltaic (PV); or indirectly using concentrated Solar power (CSP).The concentrated solar power uses lenses or mirrors and tracking devices to focus a large area of sunlight into a small beam. The photovoltaic converts light energy into electric current using the photovoltaic effect. In the photovoltaic effect, sunlight is absorbed by the solar panel whereby causing excitation of an electron or other charge – carrier to a higher energy level. Solar energy is readily available and renewable, hence it provides a safe, clean and cheap substitute to the increasing problems of over-dependence on plants, generators etc. for electricity which is also, the air pollution resulting from the exhaust from plants and generators has given the ‘generation of electricity through solar’ an edge. The solar power system is cheap, noiseless because it constitutes no moving parts in the system; it is durable, reliable and requires little or no maintenance practice to sustain it. Moreover, the solar power system has an edge especially in areas where electricity cannot be sent to through transmission lines. The question is, what is the amount or how can the electricity being generated through the solar power be quantified? The amount (voltage) of electricity so generated through the solar 0power system depends on the intensity of the solar energy incident on the solar panel. Therefore, it is best used in summer regions like Nigeria Cameroun etc. where the intensity of solar energy is high compared the winter regions. The solar power system consist of an array of photovoltaic Which collects a substantial amount of sunlight and converts it into Direct Current (DC) which fluctuate naturally with the intensity of the sun, hence the inverter is used to convert this fluctuations of the DC signals to the desired / required Alternating Current Consumed in homes.

**LITRTURE REVIEW**

The solar PV Power generation system (Powerpack) supplied by Swissmango Solar Energy Solutions Pvt Ltd is a high efficient, modular, extendable and cost effective power generation solution. The system is designed to International Standards to ensure that you have years of trouble-free operations. As a result of proven technology, the system is highly efficient and maintenance free. With one-time investment, the Solar PowerPack provides the prudent way of managing the energy costs in an eco-friendly way. The savings made on energy costs will help the companies to directly benefit and contributing to their growth. The List of major components used in this system are listed below.

Solar PV Modules: The sun light (solar radiation) falling on the modules is converted in to DC energy by photovoltaic principle. The generated by solar modules can either be used to supply the power to the connected load or to charge the battery bank.

c. PCU does the function of controlling grid power by leading PF and prefer the solar energy to the load. The system also contains the Charge Controller as part of the same system or as an independent unit.

Module mounting structure(MMS): MMS is the structure to mount the solar PV modules with specified angle depending on the location when the system to be mounted. The tilting will vary depending on the longitude and latitude of the location.

Salient Features and Benefits of System

A clean, silent and eco-friendly source of power ,Solar modules convert sunlight into electricity without pollution,Negligible maintenance as there are no moving parts and maximum reliability ,Long life span of solar modules ,Modular design and easily expandable ,Simple installation: can be mounted on roof top or ground ,Can be installed at point-of use to avoid transmission losses ,Energy Independence ,Protection against future escalation of energy costs , Available throughout the year

**Problem Statement**

In our country today interrupted power supply has been a serious issue and it makes life difficult and unbearable because people on earth, firms, industries, churches, shopping malls, school, and even business center etc. depends on power supply for the day-to-day running of their activities. High electric bills are the main cause of tuition fee increase. The proponent has also identified one of the greatest problems our world is facing today – climate change. Not only does the problem fall into the resources, but also the byproducts. The emissions of most machines our world uses today have negative effects on the environment.

## Project Aim

The main purpose of this project is to construct and assemble a solar system.

**Project Objectives**

The primary objective is to Construct and assemble a solar system which is renewable form of electrical energy that save and provide more sufficient electric power more than that of other electricity generator.

**Project Scope**

This project work covers the selection of solar charge controller, battery and inter-connectors (cables) based on the requirement of the system, design analysis of the solar panels, the economics analysis (bills of engineering measurement and evaluation), and testing and experimentation of the system.

**Project Block Diagram**

Solar panel

2KW

Inverter

1000VA

Storage battery

Voltage regulator

Load of

2038.24w

**REFERENCES**

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