



PROJECT PROPOSAL SEMINAR

PROJECT TOPIC

**INSTALLATION OF 4.2KVA HYBRID
INVERTER SYSTEM
BY**

ND/23/EEE/PT/0009

SUPERVISED BY: ENGR. DR. LAWAL O.A

PRESENTED TO:

**DEPARTMENT OF ELECTRICAL & ELECTRONIC ENGINEERING
INSTITUTE OF TECHNOLOGY
KWARA STATE POLYTECHNIC, ILORIN**

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PRESENTATION OUTLINE

- ❑ INTRODUCTION**
- ❑ STATEMENT OF THE PROBLEM**
- ❑ AIM OF THE PROJECT**
- ❑ OBJECTIVES OF THE PROJECT**
- ❑ METHODOLOGY**

1.1 INTRODUCTION

- ❖ **The increasing demand for reliable and efficient power solutions has led to the development and adoption of inverter systems across various applications. A 4.2kVA inverter system represents a practical and efficient means of addressing power supply challenges, particularly in the department of electrical/electronic engineering with unstable or intermittent electricity supply.**
- ❖ **An inverter system converts direct current (DC) power, typically from batteries or renewable energy sources like solar panels, into alternating current (AC) power, which is compatible with most house hold and industrial appliances. The 4.2kVA rating denotes its capacity to handle loads up to 4.2kva kilovolt-amperes, making it suitable for medium-scale applications such as powering residential homes, small offices, or specific industrial equipment.**

2. STATEMENT OF THE PROBLEM

- ❖ The reliability of power supply remains a significant challenge in many regions, particularly in developing countries. Frequent power outages and an unstable electricity grid hinder the efficient operation of residential, commercial, and industrial activities. These challenges necessitate the development of alternative power solutions to ensure continuity in daily operations and improve the quality of life.
- ❖ A 4.2kVA inverter system is proposed as a solution to address these issues, but several problems need to be addressed in its design and implementation, including:
 1. **Unreliable Power Supply**
The department of electrical/electronic engineering kwara state polytechnic experience disruptions in power supply from the locally made 4.0kva inverter installed. causing inconvenience and financial losses. A foreign made hybrid 4.2kva inverter system is needed to provide a dependable backup for essential appliances and equipment. That will and a convenient environment for laboratories and staff offices
 2. **Energy Efficiency and Optimization**
locally made inverter systems often suffer from inefficiencies, leading to energy wastage and high operational costs. Developing a highly efficient hybrid inverter system that optimizes energy storage and conversion is critical.

3. AIM OF THE PROJECT

**The primary aim of this project is
to installed 4.2kVA hybrid inverter system**

4. OBJECTIVES OF THE PROJECT

- The primary objective of the project is to construct a **4.2kVA hybrid inverter system** that provides a reliable, efficient, and sustainable power supply for the department of electrical and electronic engineering kwara state polytechnic, The specific objectives include the following:
 - ❖ **Reconfiguration of the solar panels to achieve an optimum charging of the batteries and supply.**
 - ❖ **Ensure Energy Efficiency**
Optimize the design to minimize power losses during the DC-to-AC conversion process, ensuring high efficiency in energy utilization.
 - ❖ **Incorporate Renewable Energy Sources**
Integrate the ability to work seamlessly with renewable energy inputs, of solar panels, to promote sustainability and reduce dependency on fossil fuels.

6. METHODOLOGY

- **THE methodology for the installation of the 4.2kVA inverter system outlines the step-by-step approach and technical processes to achieve the project objectives. This involves system analysis, installation and testing.**

BLOCK DIAGRAM

