*A mid-sem project progress report*

*on*

**Project Title**

*submitted in the partial fulfillment of the requirements for the award of the degree*

*of*

**Batchelor of Technology**

*in*

**Electrical Engineering**

*by*

**STUDENT-1 NAME (2018UGEE000)**

**STUDENT-2 NAME (2018UGEE000)**

**STUDENT-3 NAME (if any) (2018UGEE000)**

*Under the supervision of*

**SUPERVISOR’S NAME**

**(Designation – e.g., Professor)**

**DEPARTMENT OF ELECTRICAL ENGINEERING**



**NATIONAL INSTITUTE OF TECHNOLOGY JAMSHEDPUR**

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##### INTRODUCTION

There are several factors attributing for the popularity of micro-grids. ----------------------------------------------------------

##### RENEWABLE ENERGY

Renewable energy, also known as clean energy, is derived from natural sources or processes that are renewed on a regular basis. -----------------------------------------------------------------------------------------------------

1. **SOLAR PV SYSTEM**

The solar photovoltaic cell (PV) converts the solar energy into electrical energy directly with the help of solar PV modules or solar PV arrays. --------------------------------------------------------------------------------------------

1. **DC-DC BI-DIRECTIONAL CONVERTER**

Bidirectional converter is the modified version of conventional DC-DC converter with anti-parallel diode connected with MOSFET/IGBT. -----------------------------------------------------------------------------------------------

1. **BATTERY STORAGE SYSTEM**

Battery storage systems are devices that allow renewable energy sources such as solar and wind to be stored and released when the power generated by the grid is less that the requirement. ----------------------------------------------------------------------------------------------------------------------------------------------------

A picture containing text, sport

Description automatically generated

Fig. 1. CC-CV modes of battery charging

##### LITERATURE REVIEW

For the task to be implemented, a thorough literature review has been conducted and is given below.

The authors of [1]elaborates the interest and potential significance of recent technology related to renewable energy sources. -----------------------------------------------------------------------

The Battery Charging Methods of Micro-Grid Photovoltaic Systems has been elaborated in [2]. ------------------------------------------------------------------------------------------------------------------------------

In [3], the authors haveproposed a bidirectional DC–DC converter for an energy storage system with galvanic isolation. -------------------------------------------------------------------------------------------------------------

**------------------------there must be at least 15 articles/papers/book/book chapters used for the literature survey------------------**

##### PROBLEM FORMULATION

Renewable energy technology is well known around the world, but the difficulties and obstacles encountered in implementing renewable energy technologies, particularly in tribal and rural regions, are the main concerns. ---------------------------------------------------------------------------------------------------------------------------

##### MOTIVATION

Renewable energy technologies are rapidly evolving, and engineers must be familiar with the installation and maintenance of these technologies. --------------------------------------------------------------------------------------------

##### OBJECTIVES

* + To design the model and simulate photovoltaic system using P&O algorithm in MATLAB Simulink.
  + To design the model and simulate battery controller design in MATLAB Simulink.
  + To design the model and simulate PV integrated battery system in MATLAB Simulink using isolated DC-DC bi-directional converter.

##### PLAN OF ACTION

---------------write here how are you going to achieve your objectives mentioned above – from where to get the information/data? which software to use? How to evaluate/test the proposed work? how would you implement it? add a timeline (Gantt chart, etc.) -----------------------------------------------------

#### REFERENCES

(use below-mentioned style)

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