Solar car based DC micro grid system

Submitted by:

Zohaib Hassan 12017019213

Abdullah Zaheer 12017019234

Usman Sharif 12017019233

Junaid Gul12017019077

Supervised by: Ahmad Malik

Department of Electrical Engineering

School of Engineering

University of Management and Technology

Lahore

Solar Car Based DC Micro Grid System

Submitted to the faculty of the Electrical Engineering Department of the University of Management and Technology Lahore

in partial fulfillment of the requirements for the Degree of

Bachelor of Science

In

Electrical Engineering

Project Advisor **Co-Advisor**

_____ _____

Director

Undergraduate Studies

_____

Department of Electrical Engineering

School of Engineering

University of Management and Technology Lahore

Declaration

I declare that the work contained in this thesis is my own, except where explicitly stated otherwise. In addition this work has not been submitted to obtain another degree or professional qualification.

Signed: _____

Acknowledgments

This project was supported by Sir Ahmad Malik and Sir Nouman Ahmad. We thank our colleagues from BSEE who provided help and experience that greatly helped the research, although they may not agree with all of the conclusions of this project.

We thank Sir Nouman Ahmad for assistance with Buck Boost topologies, and Sir Ahmad Malik for helping us select this project.

DEDICATED TO OUR PARENTS WHO WANTED US TO BECOME AN ENGINEER SO WE WANT TO MAKE A PROJECT THAT THEY CAN BE PROUD OF.

LIST OF CONTENTS

Contents

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

As electric vehicles becoming more popular, the companies have ideas to feed the grid more electricity, however these vehicles can provide power to the grid when they are parked serve as micro grid systems for grid regulation, thus using a system which based on solar power technology. A design for bidirectional converter and Uni directional inverter, simulations show that designs are capable of bidirectional DC TO DC and Uni directional DC TO AC power transfer to power bank and grid.

CHAPTER 1:

INTRODUCTION

1.1 INTRODUCTION TO SOLAR POWER

It's certainly clear that today the burning of fossil fuels mangling the climate and emission of carbon by burning these hydrocarbons raises the Earth temperature to high extent. Scientists are agreed that the world needs to reduce greenhouse gases emission by 25 percent up to 2020 and 80 percent up to 2050. Otherwise the emission of hydrocarbons causessevere environment problems. The idea for sun's power usage is simple. Solar collectors convert the solar energy into electrical energy. Solar is best way for energizing the cities and far areas where transmission lines cost much. Solar power, clean renewable energy source which has zero carbon emission, has huge potential of energy. The recent advancement in solar energy system are easily available for domestic and industrial purposes.