

INTRODUCTION

The global demand for renewable energy solutions has risen significantly due to the growing concerns over climate change, energy security, and the depletion of fossil fuels. Solar energy, being one of the most abundant and sustainable sources of energy, plays a crucial role in addressing these issues. A solar-powered inverter is an essential component in solar energy systems, converting the direct current (DC) output from solar panels into alternating current (AC), which is used by most electrical appliances.

This proposal aims to design and construct a 2 kVA solar-powered inverter. The inverter will convert DC from a solar array into AC that can be used to power small to medium household appliances or serve as a backup power system in areas with unreliable grid electricity.