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# Using Improved MPPT Charge Controller Improvement Functioning Efficiency of Power Grid Connected Solar Photovoltaic System

Surendra Singh Dua<sup>1</sup>, Ruchi Sharma<sup>2</sup>, and Raghavendra Patidar<sup>3</sup>

<sup>1</sup>Research Scholar, Department of Electronics and Communication Engineering, Vivekananda Global University, Jaipur, Rajasthan, India

<sup>2</sup>Research Scholar, Department of Electronics and Communication Engineering, Vivekananda Global University, Jaipur, Rajasthan, India

<sup>3</sup>Professor, Department of Electronics and Communication, Global Institute of Technology, Jaipur, Rajasthan, India

E-mail: surendra.sdua@gmail.com

**Abstract.** In recent decades, the world's energy demand is closely linked to the rise of manufacturing, transport and the media. Today, large amount of the power is provided by non-renewable energy including coal, natural gas, oil and uranium. Pace of regeneration of energy is very sluggish, which adds to the possibility of short-term depletion. This paper focuses on power grid-connected photovoltaic systems. The primary objective is to regulating power pumped into the grid from solar panels and improving the configuration and regulation of inverters as used to supply electricity to the grid with optimum efficiency and according to networking requests as an interface between the grid and photovoltaic systems. The infused power management not only contains the aggressive force control but also the reactive power control. An algorithm is proposed for the design of a simple and robust grid-connected inverter power. It is based on the strategy for digital power. The proposed work analyses and improves the constraints of the VSCs' Voltage Source Converters as converters for supplying active and reactive power into the grid, ensuring the best possible connection from the solar panels, ensuring effective operation of the inverter, increasing the current injection into the grid power and harmonic levels.

## 1. Introduction

Demand is growing, exceeding supply, which results in a high fluctuation in world oil prices. On the other hand, this type of consumption of energy influences the environmental impact. For example, for oil and coal, significant greenhouse gas emissions are generated daily playing a role in climate change and increased pollution [1]. These analysis lead to the search for more innovative solutions to address the energy deficit and limit the negative impact about the environment. Thus, the development of clean and non-polluting sources based on renewable energies are increasingly requested by energy producers and government. However, the solution to reduce the consumption of fossil fuels is the generation of electrical energy from renewable energy, renewable energy has to be regenerated naturally and indefinitely in time. The sun's energy meets these criteria in its abundance on earth and its practically



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