

Off-Grid Power Management System using IoT

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Abstract: The "Off-Grid Solar Power Management System Using IoT" project is a solution to address the energy needs of remote and off-grid locations through the integration of renewable solar power and Internet of Things (IoT) technology. In the face of limited access to conventional power sources, this project leverages IoT devices and smart technologies to create a robust energy management system. The system allows for the efficient capture, storage, and distribution of solar energy while enabling real-time monitoring. Key features include data collection on solar panel performance, energy consumption, and user-friendly interfaces accessible through web applications. This project demonstrates the potential to provide sustainable, reliable, and environmentally friendly energy solutions for off-grid communities here in Malawi, enhancing their quality of life and contributing to global efforts for clean energy adoption.

Keywords: Solar Power Management System