

# **Smart Irrigation System with Hybrid Power Generation using SCADA**

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**Abstract:** *This project presents a Smart Irrigation System powered by hybrid energy sources, integrated with SCADA (Supervisory Control and Data Acquisition) for real-time monitoring and control. The system utilizes renewable energy sources such as solar and wind to generate power, ensuring sustainability and reducing dependency on the grid. It automates irrigation based on soil moisture levels, temperature, and humidity, optimizing water usage for agricultural fields. The SCADA system provides a user-friendly interface to monitor environmental conditions, control water pumps, and receive alerts, enabling efficient and remote farm management. This project aims to promote sustainable agriculture, conserve natural resources, and reduce manual intervention through automation and smart energy utilization.*

**Keywords:** SCADA

