

DESIGN OF PICO HYDROPOWER PLANT AS EMERGENCY POWER SUPPLY AND OUTPUT LOAD MONITORING USING BLYNK

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ABSTRACT

The demand for clean and renewable energy sources in contemporary society has become increasingly critical, particularly in remote regions. Consequently, a Pico Hydro Power Plant (PLTPH) utilizing an Archimedes Screw turbine has been developed as an emergency energy solution for areas characterized by limited water flow. This PLTPH is engineered to harness energy from low-flow water sources and store it in batteries, providing backup power during outages. The system incorporates Internet of Things (IoT) technology via the Blynk platform, enabling real-time monitoring of output loads. Test results indicate that the system operates with high efficiency and serves as a dependable emergency power source while facilitating performance monitoring through IoT applications.

Keywords: *Pico Hydro Power Plant (PLTPH), Archimedes Screw Turbine, Renewable energy, Emergency power supply, Internet of Things (IoT), Blynk, Energy efficiency*