

***Design of a Prototype for Solar Well Water Irrigation Installation in Tegalgede Housing, Jember Regency***

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***ABSTRACT***

*Water is one of the most crucial needs for life. Almost all people in Indonesia use clean water from companies and well water to meet their daily needs. The Tegal Gede housing complex in Jember Regency is one of the users of well water by using an electric water pump to get water. Frequent PLN power outages in the area hamper the effectiveness and efficiency of well water irrigation. The design and construction of a solar water well irrigation installation prototype is expected to be able to supply electricity reserves when the PLN electricity blackout occurs. The design of a PLTS system for water well irrigation installations uses components, namely a 100Wp mono-crystalline solar cell, a 65 Ah deep cycle battery, a 6 A SCC, a 1000 watt inverter and an 8 pin LY2N relay. Testing the PLTS system 3 times with testing time from 08:00-15:00. The average daily energy production of solar cells is 280.985 Wh and the average daily energy consumption for water pumps is 84.397 Wh. PLTS electricity production to pump to meet the needs of 600 liters of water. The excess daily electricity production has the potential to be used for other equipment.*

***Keywords*** : PLN, PLTS, Water Pump.