

**Rancang Bangun *Prototype Solar Ac Water Pump* untuk *PV Cleaning* PLTS 32
kWp di PT.Wijaya Karya Industri Energi**

*(Design of Solar Ac Water Pump Prototype for PV Cleaning Solar Cell System 32
kWp at PT.Wijaya Karya Industri Energi)*

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ABSTRACT

Photovoltaic cleaning is important to maintain the performance and efficiency of solar panels. Solar panel cleaning system can be built with manual or automatic system. The research took place at PT.Wijaya Karya Industri Energi or PT.Winner in Bogor Regency, PT.Winner has a 32kWp On-Grid PLTS whose on-grid configuration does not utilize batteries as energy storage. The purpose of the research at PT.Winner is to design and build a solar panel cleaning system to maintain the efficiency of solar panels. The method used is an experimental study starting from system design to data collection which aims to clean the surface of solar panels or photovoltaics on the rooftop. Data collection examines solar panels that work as a source of electricity and water pumps as a water booster to clean the surface of photovoltaics. The results of the study by utilizing the remaining on-grid solar panel power and using a pump load of 200 watts. The efficiency of the solar panel is 15.55% and the water pump has an efficiency of 73,51% for 5 days of research. The water discharge was obtained with an average of 0.47 liters/second. The cleaning system can be carried out 1-2 times per 1 week working day.

Keywords: *Solar Panel, Water Pump, PV Cleaning*