

ABSTRACT

PV Module is a device that contains photovoltaic cells that can convert solar energy into electrical energy and one of the problems that arise in the use of the PV Module is an environmental problem in the form of dust sticking to the surface of the PV Module which reduces energy absorption efficiency and requires maintenance in the form of a cleaning system. One example of a cleaning system is the PV Cleaning System at the Rooftop Solar Plant at PLTG Pemaron Bali. This system uses the water cleaning method and requires a piping network for the process for draining water from the reservoir can reach the rooftop. In the cleaning system, the total head on the piping network and the hydraulic power of the pump used have an effect on cleaning time

The purpose of this research is to analyze the piping network in the system and find out the actual cleaning time. This research was conducted on the PV Cleaning System in Rooftop Solar Plant at PLTG Pemaron Bali using primary data contained in the system and secondary data obtained from various available research journals. The data obtained will be used to perform calculations which include water requirements for the PV Cleaning System, flow velocity, head loss, total head, pump hydraulic power, pump efficiency and flow time. The results of the calculations can be used as consideration for the company to make system improvements.

The results obtained from the analysis and calculations are that the value of losses is 19.42 m in the piping network, the hydraulic power of the pump is 320.67 Watt and the flow time is 31 minutes 21 seconds. This flow time will be used to determine the actual system's cleaning time.

Keyword: PV Cleaning, Loss, Cleaning Time.