ABSTRACT

The search for renewable energy is highly in demand since the use of fossil fuels as source of energy is depleting. One of the renewable energy resources that are widely used is water or hydro power. This study was on design, implementation and assessment of pico hydroelectric generation in small communities in Cavite. The area that has the highest average rainfall in Cavite was the basis of the study, which was in Tagaytay, since it would produce the highest estimated power output.

In order to perform the design of the said pico hydroelectric generation in Cavite, the group conducted some research about pico hydroelectric generation implemented in different countries in Asia and history of hydropower plants in the Philippines.

The following parameters that were used for the design of the pico hydroelectric plant were: conceptualization of the pico hydro system, rainfall data, pico hydroelectric power plant for rainwater, planning for the pico hydropower plant, location, collection systems and components and design parameters for the pico hydro power plant.

The pico hydroelectric system was very tedious in design and implementation. The objectives were met because the estimated power output had its basis according to the rainfall data and the performance of the system were shown in graphical form. The electric DC generator produced 20.30 watts with the voltage of 11.92 VDC with the design being 20 watts with the voltage of 12 VDC.