Conference Proceedings Volume 2592, Issue 1 AIP Conference Proceedings

Analysis about implementation of pico-hydro circulation system as renewable energy with low head

Abstract

The implementation of the utilization of pico-hydro energy generators with circulation systems using water as the working fluid currently exists, but needs to be further developed so that it is more widely applied by the community. In the current situation, where we know that countries in the world are trying to have an environmentally friendly energy source. This research that has been completed aims to analyze how the implementation of the performance of using pico hydro if it is applied with a low head. In this study, the method was carried out experimentally on a laboratory experimental scale, this was done in order to obtain data to be able to proceed with the implementation of pico hydro at low head flow. In this section of the results we can present that with a low head the implementation of pico hydro can be applied, various blade angles provide information on an increase in performance if the angle is greater it can be seen that from point 0 to 90 there is an increasing tangential force that works, this is due to the increasing the magnitude of the applied force. As for losses, the greater the flow capacity, the greater the losses. The biggest losses are at the angle of the turbine shaft slope of 60° and blade 90, which is 0.28 m.