

ABSTRACT

POTENTIAL STUDY OF MICRO HYDRO POWER PLANT (MHP) ON PDAM WAY SEKAMPUNG LINE PIPE AT BUMIARUM VILLAGE, PRINGSEWU DISTRICT, PRINGSEWU REGENCY

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Electrical energy has become a part of our lives. Even, for some people has become the primary requirement that can't be eliminated. This can affect the sources of energy used in the process of power generation. Therefore, the presence sources of renewable energy is needed to increase the energy supply for the community. In this case, authors tried to do some research to harness the flow of water in the PDAM Way Sekampung pipe as micro hydro power plant (MHP). The advantage of making the MHP's pipeline PDAM isn't need for the manufacture of civilian buildings by making MHP is only by utilizing the existing water flow in a pipeline, so the production cost can be reduced. Moreover, can give an idea on the PDAM and the public that the pipeline PDAM that had been used only as a water distribution, can be used as power plant. The purpose of this study was to determine the discharge and head PDAM pipelines and then dimensional turbine design based on the potential obtained. The survey was conducted to obtain primary data and secondary data. The primary data is data acquired directly, while secondary data is the data obtained from documents stored on PDAM Way Sekampung. From the research, discharge obtained an average of 46.287 L/s in normal conditions, and have the water level (head) of 5,998 m from the location of the turbine. The potential of the PDAM Way Sekampung, can generate power of 2,057 Kw. Results dimensional turbine design based on primary data or the direct retrieval, turbine shaft diameter 20 mm, 239 mm runner diameter, blade length 212 mm, a thickness of blade 1 mm and blade number 20.

Keywords: Energy, Potential, Micro hydro, cross-flow turbine