

## ABSTRACT

Hydroelectric power plengan is one of power plants located in a pangalengan west java , in 1 day can produce electricity as many as 136.800 kw/d and need water by 725.760 m<sup>3</sup>/d. Water used by plta plengan is outflow with several cileunca there, water in the reservoir never is when necessary. Therefore in their final task will be discussed how to manage to outflow reservoir plta plengan to generate electricity optimally and to maintain that the waters reservoirs not dry.

This problem can be seen as two problems objective , solution to complete is by using the method function penalty. To optimize outflow reservoirs to plta plengan will use genetic algorithm ( GA ) .Outflow reservoirs have been optimize will provide a electricity and deficient reservoir .After using ga optimize obtained the production of electricity equal to data existing is as much as 13,619,115 kw/year and lack of lower 0 m<sup>3</sup>.

*Keywords: Genetic Algorithm ( GA ), hydroelectric power, predictions outflow reservoir.*