HIDROLOGY ANALYSIS FOR HYDROPOWER FEASIBILITY STUDY ON WAY SEMAKA AND WAY SEMUNG WATERSHED

BY

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Hydropower development on Way Semaka and Way Semung Watershed is one of anticipation for electrical energy demand in the future. Before carrying out development projects, a feasibility study needs to be done. One of the activities that need to do on a feasibility study for hydropower is a hidrology analysis. Analysis hidrology in this study aimed to compare the calculated discharge with a low flow discharge were measured.

There are primary data and secondary data in this study. Primary data is water level and flow velocity. Secondary data is watershed maps, river maps, land use maps and rainfall data. From the primary data should be known the measured discharge. From the secondary data can be known calculated discharge. Because of the limited hidrological data on Way Semaka and Way Semung Watershed, this study used regionalization method using secondary data from Way Besay Watershed.

From the results of the evaluation that compares calculated discharge and measured discharge, it is known that the value of Q80% for Way Semaka and Way Semung Watershed 14.33 m3/second and 3.38 m3/second. This discharge is assumed as a low flow discharge for electrical power calculations. The results of calculation, electrical power for Way Semaka and Way Semung is 9.3248 MW and 1.6694 MW. It can be concluded that the DAS and the Way Semaka and Way Semung Watershed are feasible for hydropower.

Keywords : hidrology analysis, discharge, low flow, hydropower.