EVALUATION OF HYDRO POWER POTENTIAL IN UMA OYA BASIN

A DISSERTATION

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This Dissertation has not been previously presented in whole or part, to any University or Institution for a higher degree.

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ABSTRACT

A substantial quantity of untapped hydro energy will still exist in Sri Lanka, even after the completion of the Accelerated Mahaweli Programme, as still a number of rivers and tributaries will remain unexploited. Hence it is imperative to launch a project on formulating a methodology to calculate the quantity of technically feasible hydro energy of a river basin as accurately as possible. The actual hydropower available depends on technical, economical, political and physiographic factors.

This dissertation formulates a methodology to evaluate available hydropower potential in the Uma Oya basin, which is a sub catchment of the river Mahaweli, at four different levels of gross and net potentials.

They are,

(a) Gross precipitation potential
(b) Gross surface runoff potential
(c) Gross river potential
(d) Net potential with individual reservoirs

The relationships between different levels of gross and net potentials are analysed and the technical feasibility of the Uma Oya basin for the development of hydropower is examined.

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