

Feasibility of Small Hydropower Plants Odisha

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Abstract : Odisha (India) is in need of reliable, cost-effective power generation. A prolonged electricity crisis and increasing power demand have left over thousands of citizens without access to electricity, and much of the population suffers from sporadic outages. The purpose of this project is to build a methodology to evaluate small hydropower potential, which can be used to alleviate the Odisha's energy problem among rural communities. This project has three major tasks: the design of a simple SHEP for a single location along a river in the Odisha; the development of water flow prediction equations through a linear regression analysis; and the design of an ArcGIS toolset to estimate the flow duration curves (FDCs) at locations where data do not exist. An explanation of the inputs to the tool, as well as how it produces a suitable output for SHEP evaluation will be presented. The paper also gives an explanation of hydroelectric power generation in the Odisha, SHEPs, and the technical and practical aspects of hydroelectric power. Till now, based on topographical and rainfall analysis we have located hundreds of sites. Further work on more number of site location and accuracy of location is to be done.

Keywords : small hydropower, ArcGIS, rainfall analysis, Odisha's energy problem

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