

Energy Security Using Small Hydropower System

R. Jha

Abstract:

Water and solar energy are available in nature as renewable sources of energy and small hydropower systems for generation of electricity are mainly based on available water resources. Small hydropower generated using water is a renewable source of energy where power is derived from the energy of water moving from higher to lower elevations. Small hydropower has been in use over the globe for the last few decades as the hydropower has the best conversion efficiencies among all known energy sources (about 90% efficiency, water to wire). At present, about 23% of the world's electricity supply is from hydropower plants. However, real application of hydropower for generating electricity in Odisha, India is at infancy stage. In this study, use of hydropower in developed as well as in developing countries, their mechanism, and cost-effectiveness in the State of Odisha, India, has been discussed. The objective of the paper is to identify the possible implementation of hydro power in certain locations of Odisha in the present competitive market situation.

Key words: Hydro Power, Prospects in Odisha, Flow duration curves, Head, SHP