POTENTIAL OF SMALL HYDRO POWER PROJECT IN INDIA

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ABSTRACT

Hydro energy is the most reliable and most cost effective renewable energy source. Among all the renewable energies, hydropower occupies first place in the world and it will keep this place for many years to come. Amongst the renewable energy sources, small hydro is one of the most attractive renewable energy technology. Small hydropower system use the energy in flowing water to produce electricity. Although there are several ways to harness the energy from moving water, run of the river systems, which do not require large storage reservoirs, are often used for micro hydro and sometimes for small scale hydro projects.

The position of hydro power plants becomes more and more vital in today's global renewable technologies. It is the cost effective way to bring electricity to remote villages that are far from transmission lines. It is expected to increase more rapidly than demand for other forms of energy.

Keywords : Small Hydro Projects, Electricity requirement, Cost effective.

Full Description

Small and mini hydel potential can provide a solution for the energy problems in remote and hilly areas where extension of grid system is comparatively uneconomical and also along the canal system having sufficient drops. The small hydro potential could be developed economically by simple design of turbine, generator and civil works. Small and mini hydel capacity aggregating to about 1500 MW is in operation, and Government is determined to provide thrust for developing the assessed small hydel potential at a faster pace henceforth.

An estimated potential of about 15,000 MW of small hydro power exist in India. Ministry of New and Renewable Energy has created a data base of potential sites of small hydro based on information from various states and on studies conducted by Central Electricity Authority. 5,415 potential sites with an aggregate capacity of 14,305.47 MW for projects up to 25 MW capacity have been identified. The data base is continuously updated.

In this paper I am going to give brief introduction of hydro power plants and their classifications. I am going to do a comparative study of small hydro projects against other renewable energy sources in terms of cost of generation, efficiency, life span, yield factor. Briefly explaining the

advantages of Small Hydro Power and reasons why we should focus to develop more and more small hydro projects. I will also explain different factors responsible for the selection of site for small hydro power plant and components of small hydro projects. I will also try to do a potential assessment of a site by taking a case study of a small hydro plant and discuss the important parameters associated with it.

The development of small hydropower around the world in on increase, small hydro offers a wide range of benefits especially for rural areas and developing countries. Government, financiers, and developers are finding new ways to fund and promote small hydropower development. Small Hydro Power is considered non-conventional as against Hydro Power which is conventional. Focus has now shifted to Small Hydro Power.