

A GIS APPLICATION FOR THE PRELIMINARY SELECTION OF SMALL HYDROELECTRIC POWER PLANTS SUITABLE SITES

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ABSTRACT

Today the international community recognizes renewable resources as fundamental elements of an energy policy whose purpose is to pursue a sustainable development. The accomplishment of such policies has a particular effectiveness at regional scale because of the “local” character of these resources and their positive impact on socio-economic development and local employment. The minimization of environmental impact is a further important aspect of the use of renewable compared to fossil fuels.

Although hydropower is the most established renewable resource for electricity generation in commercial investments, it is of great importance that this kind of renewable energy should be further developed and become more attractive to investors of the public or private sector.

This paper presents a Geographical Information System methodology developed to perform a preliminary selection for suitable sites for installing small hydroelectric power plants. Of great importance is the ability of this GIS application to be used as a Decision Support System in an administrative level because of its ability to compute several scenarios for hydropower development in hydrological basins.

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