

Typology of Hydropower Schemes

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- 11) **Short Summary:** The goal of this research project is to find a typology of hydropower schemes by explorative statistical tools which includes technical, economical as well as environmental and socio-economic aspects.
- 12) **Keywords:** Environmental Sciences

13) Project description:

The goal of this research project is to find a typology of hydropower schemes by explorative statistical tools which includes technical, economical as well as environmental and socio-economic aspects. The comprehension of all these aspects is crucial for a broad characterization of hydropower schemes in the sense of the sustainability concept. Constructing an appropriate database is the first important step. This database will include alpine hydropower plants (>300kW) of Switzerland and Austria, possibly also from other neighbouring countries. Geographic Information System (GIS) Software will be used to construct the database. The main sources of information will be already existing databases from different Federal Offices (BWG, BUWAL, BFS, BFE), data from hydropower plant operators as well as data from environmental impact assessment reports, construction and jubilee reports. In a second step the database will be analysed by explorative statistical tools (e.g. cluster analysis) to identify groups of hydro-power schemes. Developing this typology will help dealing with the immense diversity of existing hydro plants which is mostly caused by the site specificity of each plant. The idea is that the typology of hydropower schemes provides knowledge on a level in between the singularity of each hydro plant and hydropower as a technology by identifying typical groups. This is of importance for 1) a broad assessment of existing hydro-power schemes in many contexts and 2) an assessment of interactions and correlations of characteristics of hydropower schemes and external effects as well as 3) the identification of important indicators. In this sense the typology should provide a basis for a comparison of different electricity producing technologies on a level playground.

14) Popular description: no entry

15) Graphics: no entry

16) Publications: no entry

17) Links to important web pages:

- <http://www.cepe.ethz.ch>