



PREP

Promotion of Resource
Efficiency Projects

PREP Topic: Water for Energy and Energy for Water

Background:

In 2004, WISIONS presented good practice examples on water and energy in its second brochure "Water and Energy – Precious Resources". Three years on, the topic is as important as it was then. For example, the current UN "Water for Life" Decade 2005-2015 stresses the importance of taking immediate action on water-related issues dealing with health, biodiversity, environment, agriculture and energy, as well as gender and the fulfilment of the Millennium Development Goals.

The urgency becomes clear when bearing in mind that, at present, 1.1 billion people in developing countries have no access to safe drinking water. Furthermore, 2.6 billion people lack access to basic sanitation. Around 70% of consumed surface or ground water is used for agricultural purposes. Moreover, withdrawals for land irrigation are estimated to grow by 14% from 2000 to 2030. Additionally, the agricultural sector is facing competition from other sectors that are also increasing their demand for water, forcing agriculture to improve irrigation efficiency, to decrease pollution and to use recycled water.

Above all there is the connection between water and energy. Water, on the one hand, is a driving agent for renewable energy with great potential to improve the energy supply for people who lack reliable access to electricity or use inefficient energy sources. On the other hand, renewable energy can be a promising solution for the provision of drinking and/or usable water.

Small hydropower plants are a reliable supplier of electricity generation, especially for rural populations without access to grid electricity. Furthermore, in comparison to their larger counterparts, these plants are both environmentally and socially sound and can lead to independence from other energy providers. More recent attempts to use water for energy generation are evident in the establishment of wave and tidal power plants. The kinetic and potential energy of the waves, derived from the wave's orbital movements and head difference between crest and trough, are converted into electrical energy.

Providing water of an optimal quality usually requires energy, for example groundwater pumping, desalination or irrigation. These activities are especially challenging in remote regions lacking access to conventional energy systems. In such circumstances, renewable energy, especially solar energy, can be a good alternative as it is a decentralised source of energy. However, regions with grid access can also take advantage of the use of renewable energy for the different kinds of water provision. For example, desalination of water is often needed in areas with high solar radiation and using the sun as a source for energy is a reliable solution which benefits the environment as well as the economic situation.

In this context, WISIONS would like to renew its call for good practice examples on water and energy that help to fulfil the commitments and, to that end, invites the submission of examples of good practice.

Fields of interest include:

- projects concerned with socially and ecologically sound small hydropower
- projects focussing on wave or tidal power
- projects that reduce water poverty by e.g. desalination of salted or brackish water with the help of renewable energy
- projects that support water treatment systems running with renewable energy to improve sanitation and the reuse of water
- projects that address the use of renewable energy for water pumping and resource efficient irrigation systems