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The concept of hydropower certification in Italy and Slovenia

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River regulation by building a hydropower plants (HPPs) is one of the most stressful factor influencing the aquatic and riparian ecosystem. In many countries a development of HPPs is often opposed by public bodies and NGOs, worried about the risk of adverse effects on the “good status” of water bodies, that, according to the Water Framework Directive (2000/60/EC, WFD), has to be reached by year 2015.
The paper describes a technically and economically feasible certification procedure for existing hydro power generation facilities of higher environmental standard, being explicitly coherent with the requirements of the WFD, to be implemented in "green labelled" electricity products, and being integrated, as much as possible, with existing EU tools, such as Ecolabel, EMAS, EIA and SEA. The methodology was developed for Italy and Slovenia and it will be tested in different types of HPPs in both countries.
In order to be certified, a given HPP has to commit to carry out appropriate measures in order to mitigate its impacts on specified environmental objectives, in such a way to fulfil predefined environmental targets and prescriptions. These measures have to be described through a specific management programme, based upon a dedicated environmental study, supported mainly by existing data, but complemented by ad-hoc assessment/monitoring when necessary. The realization of both the environmental study and the management programme must be supported by public consultation; both documents must be approved through an auditing process.
For some types of HPPs, operating in totally artificial networks and not entailing direct or indirect impact on water related ecosystems, a simplified procedure is foreseen, where detailed environmental analysis, related management programme and stakeholders involvement are not requested, but just a description of the system and proof of fulfilment of the conditions and of specific prescriptions. HPPs impacting water bodies defined as Artificial or Heavily Modified (following the definitions of the WFD) in most cases have to fulfil more limited environmental targets. The involvement of local stakeholders must be ensured along the whole certification procedure and, when completed, during the lifespan of the label.
The methodology includes a predefined framework where pressure factors due to hydropower production are related to potentially impacted environmental quality elements. For each of these cause-effect relationships possible mitigation measures are suggested. In the long run, it is expected that the certification will have a positive impact on hydro power generation in Europe, will help focusing the conception of new HPPs towards more sustainable solutions and making easier authorization procedure.