

Alpine rivers are not renewable: Towards a fully sustainable energy strategy in the Alps

CIPRA-position, result of the work carried out at its annual conference “*Alpine trough - Who gives, Who takes, and Who decides?*” held in Bolzano on October 10th-12th 2013.

In the context of the energy transition, Alpine states and regions are developing new energy strategies including a strong re-orientation towards renewable energies such as hydropower. Many new projects are being developed. These tend to have a focus on energy production, neglecting consequences on the Alpine landscapes and environment.

Water, in all of its forms, is undoubtedly one of the most precious Alpine resources. It is first of all a fundamental element of the Alpine nature and landscapes, as acknowledged in many policies such as the European Water Framework Directive or the Biodiversity Strategy of Natura 2000. The Alps also provide potable water for populations within the Alps and beyond. Alpine water has also been used throughout history, in particular since the industrial revolution, as a source of energy to develop human activities.

Today about 90% of all alpine water courses are used and capitalized on for producing electricity through hydropower. Although hydropower has the reputation of being a clean, local and renewable energy source, its impact on natural habitats and landscapes is considerable.

The conditions of this exploitation have a strong impact on the ecology of mountain streams and valley-floor rivers. Less water in rivers, severe and sudden artificial variations of water levels but also reduced sediment transport or increased erosion are among the many impacts of hydropower on the river systems. These changes create great pressure on the animals and plants attached to specific river ecosystems. Such modified rivers -which in many cases resemble canals rather than rivers- impact more globally on Alpine ecosystems and landscapes, for example through a simplification of landscape structures as well as the creation of migration barriers for animals and plants. There can also be significant impacts on risks for the population and on the availability of water for other uses.

These effects can concern the whole basin of a river, beyond administrative and national borders, and even beyond the Alpine arc. The actions implemented to mitigate these effects, such as release and modulation of minimum flows, fish ladders, silt and basin management, although necessary, are not enough to guarantee adequate ecological quality and continuity in water courses and basins.

In its preamble, the Alpine Convention points out that the natural resources of the Alpine mountain region are being increasingly exploited. A proposed specific Alpine Convention protocol on water management has as yet not been developed, creating a policy vacuum.



Aware of the necessity of an energy transition from fossil and nuclear to sustainable and renewable energy sources, and of the urgent need to preserve the last natural alpine rivers, CIPRA urges:

- 1. To give priority, within the energy transition, to a reduction in energy consumption** and with the aim of moving towards a low-consumption society such as described for example in the concept of the '2000 Watt Society'.
- 2. To stop the construction of new infrastructures for hydropower. Natural Alpine watercourses cannot sustain any more water extraction for energy production**, including many so-called 'small deviations' which, although limited, cause significant ecological damage to the last natural tracts of watercourses. Therefore, Alpine states have to introduce in their own legislations explicit bans on new water deviations for energy production in the Alpine natural hydric network, and to abolish all sorts of economic incentive benefiting new hydropower plants.
- 3. To optimize existing hydropower plants** in order to ensure more efficient energy production, which also considers protective measures for aquatic plants and animals by:
 - a. **Refurbishing, modernizing and increasing the efficiency of existing installations, whilst mitigating ecological impacts** arising from their use and from the maintenance of basins. This should be supported by investments and subsidies.
 - b. **Using 'pumped-storage' opportunities only where existing high altitude dams can be connected with low land big natural lakes, without having a strong impact on nature. No new dams or reservoirs should be constructed.** The Alps can contribute to storing electricity produced by intermittent renewable sources (wind, solar) under consideration of its environmental limits.
- 4. The "water management" protocol** has to be drafted by the Permanent Committee of the Alpine Convention as intended by the Framework Convention. And the issues presented above regarding hydropower should be given explicit consideration within the new **European Strategy for the Alps**.

Approved by the board of CIPRA International in written form, May 2014