



## European Territorial Cooperation Alpine Space Programme 2007-2013

### Context

The **Alpine Space Programme** ([www.alpine-space.eu](http://www.alpine-space.eu)) is the EU transnational cooperation programme for the Alps. Partners from the seven Alpine countries work together to promote regional development in a sustainable way.

The overall objective of the Alpine Space Programme 2007-2013 is to increase competitiveness and attractiveness of the cooperation area by developing joint actions in fields where transnational cooperation is required for sustainable solutions. Derived from this overall objective specific objectives have been defined:

- to encourage innovation, entrepreneurship and strengthen research and innovation capacities for SMEs;
- to enhance a balanced territorial development and to make the Alpine Space an attractive place in which to live, work and invest;
- to improve the accessibility of the Alpine Space and manage the economic and environmental consequences of transport systems;
- to improve accessibility to services and connectivity within the Alpine Space;
- to protect, manage and enhance the natural and cultural assets for sustainable development;
- to prevent and mitigate natural and technological hazards and manage their consequences, with specific regard to climate change impacts.

During the period 2007-2013, the programme is investing 130 million € in impact-oriented projects in which key actors develop shared solutions on specific Alpine issues as laid down in the programme objectives:

- Priority 1: Competitiveness and Attractiveness
- Priority 2: Accessibility and Connectivity
- Priority 3: Environment and Risk Prevention

### Involved Territories



# SHARE Project

## Sustainable Hydropower in Alpine Rivers Ecosystems

<http://www.sharealpinerivers.eu/>

### Background

Hydropower (HP) is the most important renewable resource for electricity production in alpine areas: it has clear advantages for the global CO<sub>2</sub> balance but creates serious ecological impacts on a local scale.

On the one hand hydroelectric production has to be maintained and increased following the demand trend. EU countries must also increase their share of renewable electricity production according to RES-e (Renewable Energy Sources) Directive: obligatory targets have been set for 2020, for the EU as a whole and for each Member State, leading to at least 20% of energy consumption coming from renewable energy sources.

On the other hand, HP can hardly ever be a "green" power: it often involves severe hydrological changes, it damages water body connectivity, destroys river ecosystems and injures ecological functionality. Furthermore, the 2000/60/CE Water Framework Directive (WFD) obliges member States to reach (or maintain) by 2015 a "good" ecological status of the relevant water bodies.

Finding a sustainable way to HP is therefore a strategic challenge for alpine regions.

Administrators of mountain areas face daily an increasing demand for water abstraction but lack reliable tools to rigorously evaluate the effects of water withdrawal on hydro-systems: higher performances supported by a healthy river (such as pollutants dilution, biota accommodation, sediment balance, etc.) are often difficult to measure and, in general, to relate to HP production.

Moreover, the environmental costs of HP (with respect to other energy sources) are not reflected in energy prices: consequently, consumers, producers and decision-makers don't get the correct price signals, which are necessary to make decisions about how best to use resources.

Furthermore, Global Change is modifying water resource availability for HP management and river conditions. In the whole Alpine area there's an evident need for an innovative and integrated approach supporting the decision making process on HP and river management.

### Objectives

SHARE pursues integrated (both environmental and economic) river management goals:

- defining, sharing and testing a decision making framework based on validated methodologies in order to allow public decision-makers to take transparent decisions about the management of HP concessions, taking account of effects on river ecosystems and on all stakeholders;
- classifying scenarios of water use optimization, taking into account different stakeholder needs;
- establishing a set of applicable and comparable indicators & monitoring standards, based on transferable guidelines and metrics considering specific differences among power stations, diversity of technical approaches and different river ecosystems;
- identifying and mapping the most vulnerable typologies of alpine hydro-systems in the different regions involved;
- identifying the most convenient sites and typologies of new "low impact" plants in the different regions involved;
- creating a technical panel including public decision makers, stakeholders and project partners to promote the SHARE approach at the local, national and transnational level;
- contributing to the concrete implementation at the local level of the WFD and RES-e directive.

All the above mentioned objectives are in line with the strategies of the Alpine Space Programme, namely, the involvement of relevant actors and political commitment, the enhancement of endogenous potentials, the capitalization of experiences and results and the coordination with other relevant EU-programmes.

SHARE will pay specific attention to promote a new generation of eco-investments to mitigate impacts and restore water body quality in mountain hydro-systems. At the same time the project will contribute to raising local standards for the sustainable production of energy.

## Consortium Partners

### Coordinator

- ARPA Valle d'Aosta (Italy)

### Other Partners

- Regione Piemonte (Italy)
- ARPA Veneto (Italy)
- CESI Ricerca (Italy)
- E-zavod (Slovenia)
- University of Ljubljana (Slovenia)
- Graz University of Technology (Austria)
- Institute for Hydraulic Engineering and Water Resources Management (Austria)
- University of Innsbruck, River Ecology and Invertebrate Biology Institute of Ecology (Austria)
- Government of Styria, Department for Water Resources Management (Austria)
- Joseph Fourier Grenoble University, Laboratory of study of the Transfers in Hydrology and Environment OSUG (France)
- GERES, Renewable energies, Environnement and Solidarity Group (France)
- University of Stuttgart, Departement of Hydraulic Engineering and Water Resources Management Germany)
- European Association of Elected representatives from Mountain Regions (France)

## Length

**3 years:** August 2009 - July 2012



## Role of Regione Piemonte

Regione Piemonte participated actively in the project preparation phase, has been involved in implementing the SHARE communication strategy and is currently working on a number of different Work Packages (WPs), namely:

- **WP 4 - Integrated water management:** defining the implementation status of the WFD and the RES-e directive and identifying a network of stakeholders involved in HP and river conservation issues in the Partner regions. Different management alternatives, objectives and criteria relevant for the different geographical areas are being tested by means of a multi-criteria analysis (MCA), aimed at supporting the policy-making process.
- **WP 5 - River ecosystems requests:** analysing river ecosystems, establishing a set of indicators and river monitoring standards, compiling transferable guidelines and metrics taking into account differences among power stations, technical approaches and river ecosystems. WP5 also identifies the most vulnerable typologies of alpine hydro-systems in the regions involved.
- **WP6 – HP & stakeholders requests:** WP6 defines HP production and the stakeholder requirements by considering technical aspects related to water abstraction for HP production, such as Minimum In-stream Flow (MIF), water management optimization, HP residual potential assessment, plant location and typologies of new “low impact” plants.
- **WP7 - Pilot case studies:** WP7 is focused on testing adaptation strategies and decision making procedures within the frame of national case studies. The pilot case study selected by Regione Piemonte is the Chisone and Dora Riparia catchment area.

## Contacts

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