

SHARE



Sustainable Hydropower in Alpine Rivers Ecosystems

- AS priority area: Environment and Risk Prevention
- Duration: 01/08/2009 - 31/07/2012
- [Project webpage](#)
- [Project on the website of the Alpine Space Programme](#)

Project Partners

- **Lead partner:** [Regional Environmental Protection Agency of Aosta Valley](#) (IT) **Contact person:** Andrea Mammoliti Mochet, Tel.: +39 0165278551, a.mammolitimochet@arpa.vda.it
- [Graz University of Technology, Institute for Hydraulic Engineering and Water Resources Management](#) (AT) **Contact person:** Helmut Knoblauch, Tel.: +43 676/33 100 37, helmut.knoblauch@TUGraz.at
- [Government of Styria, Department for Water Resources Management](#) (AT) **Contact person:** Urs Wiedner, Tel.: +43 (0)316 877 3089, urs.lesky@stmk.gv.at
- [University of Innsbruck, River Ecology and Invertebrate Biology Institute of Ecology](#) (AT) **Contact person:** Leopold Füreder, Tel.: +43 (0)512 507 6125, Leopold.fuereder@uibk.ac.at
- [University of Stuttgart, Departement of Hydraulic Engineering and Water Resources Management](#) (DE) **Contact person:** Sven Hartmann, Tel.: +49 (0)711 685 64774, Sven.Hartmann@iws.uni-stuttgart.de
- [European Association of Elected representatives from Mountain Regions](#) (FR) **Contact person:** Christoph Maier, Tel.: +33 (0)4 79 71 42 30, nicolas.evrard@promonte-aem.net
- [GERES, Renewable energies, Environnement and Solidarity Group](#) (FR) **Contact person:** Cyril Jarny, Tel.: +33 442 183 175, c.jarny@geres.eu
- [Joseph Fourier Grenoble University, Laboratory of study of the Transfers in Hydrology and Environment OSUG](#) (FR) **Contact person:** Philippe Belleudy, Tel.: +33 476 63 56 62, philippe.belleudy@ujf-grenoble.fr
- [Ricerca sul Sistema Energetico – RSE S.p.A.](#) (IT) **Contact person:** Stefano Maran, Tel.: +39 02 39925918, stefano.maran@rse-web.it
- [Piedmont Region, environment department](#) (IT) **Contact person:** Silvia Rovere, Tel.: +39 0114326012, ProgettazioneUE.Ambiente@regione.piemonte.it
- [Regional Agency for Environmental Protection and Prevention of Veneto](#) (IT) **Contact person:** Italo Saccardo, Tel.: +39 041 2794005, isaccardo@arpa.veneto.it
- [E-Institute](#) (SL) **Contact person:** Darko Fercej, Tel.: +386 31 214 276, darko@ezavod.info
- [University of Ljubljana](#) (SL) **Contact person:** Franci Steinman, Tel.: +386 1 425 34 60, franci.steinman@fkgg.uni-lj.si

Project summary

“Hydropower is the most important renewable resource for electricity production in the Alpine areas: it has advantages for the global CO2 balance but creates serious environmental impacts. RES-e Directives require a renewable electricity enhance but, at the same time, the Water Framework Directive obliges Member States to reach or maintain a water bodies “good” ecological status,

intrinsically limiting the hydropower exploitation. Administrators daily face an increasing demand of water abstraction but lack reliable tools to rigorously evaluate their effects on mountain rivers and the social and economical outputs on longer time scale. The SHARE project intends to develop, test and promote a decision support system to merge on an unprejudiced base, river ecosystems and hydropower requirements. This approach will be led using existing scientific tools, adjustable to transnational, national and local normative and carried on by permanent panel of administrators and stakeholders.” Source: [SHARE project summary](#)

Hypotheses

- [Changes in energy sector requires more energy efficiency and causes land use changes](#)
- [Alps are a hotspot for maintaining and restoring ecosystem services](#)

Keywords

- [water management](#)
- [natural resource management](#)
- [renewable energies](#)
- [legislation](#)

Topics

- [Reducing environmental damage](#)
- [Enhancing and protecting natural resources and natural heritage](#)
- [Safe development of energy resources](#)

Results

[Results](#) of a project can be differentiated in [outputs](#), [outcomes](#) and [impacts](#) of an intervention. Source: [OECD Glossary of Key Terms in Evaluation and Results Based Management](#).

Outputs

Output	Category	Language(s)	Target group	Remark
SHARE Handbook	Report	EN	Civil servants/administration; specific institutions	“A slim hypertext conceived as a tool to support sustainable river and hydropower management undertaken by local administrators, public and private consultants and other river stakeholders. [...] The intention is to guide the reader in a simple way through the SHARE methodological approach, and the different tools and resources developed and tested during the SHARE cooperation project.” Source: SHARE Handbook
SESAMO	Tool	EN	Civil servants/administration; specific institutions	A software (+ related handbook and dashboard test) to implement the Multi Criteria Analysis (MCA) approach to assess and compare different alternatives related to hydropower exploitation and river management.
10 Pilot activities case studies	Pilot activity	EN	Civil servants/administration; specific institutions	The SHARE MCA approach has been tested in 11 pilot case studies among the alpine regions (France>Arc-Isère , France>Var , Austria>Inn , Germany>Lech , Italy>Cordevole , Italy>Astico , Italy>Dora Baltea , Italy>Chalamy , Slovenia>Kokra , Austria>Mur) concerning both existing or planned HP plants. In general, case studies broadly represent common situations of HP.
2 geo-databases	Database	EN	Civil servants/administration; specific institutions	The purpose is to facilitate information searches related to legislation and institutions/target individuals dealing with rivers and hydropower in the cooperation area. It is possible to add laws and contacts.
SHARE Guidelines to integrate MCA procedures in normative and set of laws	Guidelines	EN	Policy makers	The purpose is to facilitate the use of the MCA methodology into national and transnational legislative frameworks.

Output	Category	Language(s)	Target group	Remark
SHARE Eco-investments, mitigations & restoration action report	Best practice	EN	Civil servants/administration; specific institutions	A review of measures for mitigation and compensation for negative effects of HP plants on pilot case study rivers.
VAPIDRO-ASTE	Tool	EN	Planners; civil servants/administration; specific institutions	A GIS tool designed to compute and evaluate the residual potential hydro power energy and to show the best locations for future projects.
Smart Mini Hydro	Tool	EN	Planners; specific institutions	A user friendly software that helps the user as a first approach to begin a preliminary project, leading to a first analysis of the economic feasibility of HP plants.
CASiMiR	Tool	EN	Planners; civil servants/administration; specific institutions	Software composed of 2 modules that allow to assess the economic effects for hydropower production as a result of ecologically adjusted discharges in minimum flow studies and to assess habitat conditions for fish within a river channel and its bank areas.
Criteria for river vulnerability mapping & vulnerability checklist	Methodology	EN	Civil servants/administration; specific institutions	The purpose is to describe a set of methodological criteria for river vulnerability mapping in relation to hydropower exploitation. The checklist is available in Excel format to allow a vulnerability assessment at local scale defining a generic score and a short definition of the vulnerability degree of the river.
MIF definition and use for hydropower production report	Literature review	EN	Civil servants/administration; specific institutions	The report describes the various methods used in the participating countries of SHARE to define Minimum Instream Flow (MIF) and possible methods to use it for HP production.
Discharge estimation in basins with no direct water flow monitoring report	Literature review	EN	Civil servants/administration; specific institutions	The report describes various methods used in the participating countries of SHARE to examine water discharge in natural basins.

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11 Maps	Map	EN	Planners; civil servants/administration; specific institutions	The maps display the following topics referred to the SHARE project area: * existing hydropower plant (installed power and annual hydropower produced (GWh/a)) * new HP plant demands - theoretical annual power produced (GWh/a) * residual HP potential * the most vulnerable river typologies to HP in Austrian, German, French and Slovenian Alps, Aosta Valley & Piedmont and South Tyrol
WFD, floods and others EU directives implementation in the AS technical report	Literature review	EN	Planners; civil servants/administration; specific institutions	“This document intends to describe the Water Framework Directive, Floods and other EU Directives related to waters and environment. Further it lists the strategies and policies in execution to implement the main steps of the Water Framework Directive within the involved SHARE countries. The information given to the various EU Directives is a condensed account.” Source: WFD, floods and others EU directives implementation in the AS technical report
SHARE videos	Public relation	EN, FR, IT, DE, SL	Civil society/citizens	General presentation of the context and the issues adressed by the project.
Indicator toolbox	Indicator	EN	Planners; civil servants/administration; specific institutions	“A database of useable indicators for river and HP issues, including different criteria indicators used in SHARE Pilot Case Studies. Some indicators are quite frequently used in the Alpine countries following comprehensive scientific bibliographic research while some others have been developed for specific needs of SHARE Pilot Case Studies implementation.” Source: Indicator toolbox

Output	Category	Language(s)	Target group	Remark
SHARE PTP - Permanent Technical Panel	Network	EN	Planners; civil servants/administration; specific institutions; scientists	PTP is an Alpine network linking together people working for public administrations, legal authorities, hydropower companies, environmental and fishing associations, research institutes of river ecology and hydraulic engineering.

Outcomes and Impacts

Unlike project outputs, outcomes and results cannot be described in a standardised way. Therefore, they are listed as free text:

<not yet available>

Accessibility of project results

- [SHARE outputs on the official website of the project](#)
- [SHARE outputs on the website of the Alpine Space Programme](#)

[water management](#), [natural resource management](#), [renewable energies](#), [legislation](#), [environmental policy](#)

Synergies

- [GIS based tools](#)
- [Reducing environmental damage and natural hazard risk prevention](#)

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