recharge green

BALANCING ALPINE ENERGY AND NATURE

Alpine SPACE

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„Beyond energy – nature´s other services matter too“

Dec 18, 2013

Nowadays we deal with possible conflicts between renewable energy expansion and ecosystem service preservation in the Alps.
We have to ask: “How much energy could the Alpine region potentially produce and how much is still sustainable?”
Finding an answer to this question is the aim of the European Academy of Bolzano (EURAC) within the project recharge.green.

Our first effort is the evaluation of renewable energy production carrying capacity in the Alpine region. The second aim is to include the new concept of sustainable energy potential in energy planning. Biodiversity and more generally ecosystem services are of great value to human life. Considering only theoretical or technical energy potential would definitely minimize the importance of biodiversity and jeopardize the preservation of alpine landscapes. Our goal is to prevent this.

Daniele Vettorato, leader of the work package “Renewable Energy potentials and conflicts”, EURAC, with his team.

More than squares on a map: Collecting data for a sustainable future in the Alps

Dec 18, 2013

Where do we still have energy potential in the Alps? Can we use these sites for energy production in a sustainable way? The European Academy of Bolzano (EURAC) and the International Institute for Applied System Analyses (IIASA) try to answer these questions in close cooperation.

The most sustainable way of renewable energy production and the trade-offs with and among different ecosystem services have to be identified. But first, knowledge of the remaining energy potential is crucial for the identification of future conflicts.

Reconcilable differences – from dissimilar data sources to a an overall picture

EURAC therefore focuses on the preparation of renewable energy potential maps. EURAC collected data from each of the Alpine region countries, resulting in a heterogeneous database with different data sources and scales. A methodology developed by EURAC makes it possible to calculate the theoretical potential from these inconsistent data (i.e. digital elevation model, irradiation, precipitation etc.) where data gaps exist in the macro region. The EURAC team is currently preparing maps showing the *status quo* of Alpine renewable energy production. In preparing these maps they are also drawing on case studies based on data collected through questionnaires. The next step will be to estimate the total economic value of the ecosystems in the pilot areas. First results are expected in spring 2014.

Models identify the most sustainable strategies

IIASA’s activities concentrate on the trade-offs between renewable energy production and ecosystem services. The first results on bioenergy production and carbon storage in Alpine forests are now available. In the analysis, Florian Kraxner and his team compared two sustainable management strategies: restricting bioenergy production to a small land area and managing it intensively, or spreading bioenergy production over a large area with less intensive management. They found out that the same amount of bioenergy could be produced by managing a small land area intensively for bioenergy production. If one applies this approach, more space could be maintained for biodiversity conservation while achieving the same production levels.
The next step is the extension of the model to consider other types of renewable energy production and to take into account additional ecosystem values.
Read more about the first results on the IIASA blog: http://blog.iiasa.ac.at/2013/10/29/recharge-green-whats-a-forest-worth/

Demanding yet promising: the recharge.green mid-term conference

Dec 18, 2013

Foresighted, regional, objective – that is how participants of the "International conference on balancing renewable energy and nature in the Alps" wish to have the planning of the energy turnaround in the Alps. recharge.green is on the right track.

The recharge.green mid-term conference in Brig, Switzerland from 12 to 13 November gathered project partners, observers and over 40 representatives of nature conservation organisations, the energy industry, administration and science from all over the Alpine space.
The aim was to present the first project results and to subject them to examination with the participants. At the same time, solutions from other projects were presented and discussed in order to jointly identify the necessary instruments for an environmentally compatible energy transition.
Many discussions raised the demand for a holistic planning approach involving local residents.

Other central findings of the conference were:

- the energy turnaround needs time. Decisions to implement the energy transition should be made in accordance with a forward-looking strategy.
- the use of locations for the production of renewable energy must be given due consideration at supra-regional level and not, as it is so often the case, merely at project level: the recharge.green decision support system has transnational application and is thus well-suited for use in such planning operations;
- as yet there is no objective, far-reaching basis for decision making for use of renewable energy in the Alpine space: the recharge.green approach offers an instrument for holistic planning and objective decision-making.

The widening of the recharge.green approach activated by the conference is to be integrated during the remaining time of the project. The conference showed that recharge.green is on the right track. The result will only be able to achieve its full effect, however, in combination with an improved political framework.

recharge.green at the European Forum Alpbach

Dec 18, 2013

Discussing global and regional problems in an interdisciplinary context is the aim of the European Forum Alpbach – an ideal stage for the novel approach of recharge.green.

At the European Forum Alpbach in August 2013, IIASA Director and CEO Prof. Dr. Pavel Kabat presented the project at a session entitled "The Potential of the Alps: Focus Sustainable Use of Resources." In the context of other interdisciplinary research at IIASA Kabat showed early results calculated by IIASA's modelling team.
The European Forum Alpbach takes place in the Austrian Alps and brings together scientists, politicians, and leaders from business and culture. It was thus a good opportunity for recharge.green to reach relevant national and international institutions, which may help in the collection of important but as yet missing data. A new strategic partnership between IIASA and the European Forum Alpbach will also help to put recharge.green on the map and hopefully enable it to extend its achievements beyond the run-time of the project.

Moving towards sustainable hydropower in the Veneto Region

Dec 18, 2013

New hydropower plants threaten the exceptional natural treasures of the Mis and Maè valleys in the Veneto Region. As pilot area of recharge.green, the Region tries to find a way to use hydropower sustainably, using a participatory approach.

Both watersheds include the Dolomite National Park and the Dolomite Unesco World Heritage Site. Mis Valley is known for its karst landforms. Maè Valley holds natural treasures and wide forests with traditional use of wood through collective rights.

The watersheds are already marked by a massive use of water for hydropower, resulting in an artificial state of most streams. The recent increase in demand for small hydropower is creating harmful pressure on the last untouched streams. A bottom up civil society protest action to stop and to rethink the priorities about renewables energy in mountain territories is ongoing.
The Veneto Region aims to propose ways to use renewable energy without harming biodiversity and ecosystem services. Involvement of local communities is the key.
The Department of "Economy and Development in Mountain Areas" is responsible for the activities in the pilot area. The University of Padua provides support with the evaluation of ecosystem services and the calculation of their total economic value. This information will be used to find the right path towards a sustainable and more acceptable use of hydropower.

The state of play in the pilot areas

Dec 18, 2013

The recharge.green pilot areas have been hard-working in the past months and successfully reached mid-term results. An overview on the current status in the pilot regions:

The **Triglav National Park** with its focus on balancing wood biomass production with nature conservation implemented the first monitoring of

forest biomass and preliminary surveys of bio-indicator species. They assessed the demand for biomass, prepared scenarios for use and confirmed that there are trade-offs between ecosystem services (ESS) and decisions based on priorities will have to be made.
The **Veneto region** is engaged in an assessment of socio-economic aspects linked to hydropower production. They recognized the need to increase the understanding of ESS concepts.
The pilot area **Vorarlberg** developed the “sample hectare” tool for evaluation and schematic representation of the trade-offs of ESS with renewable energy production.
The **Bavaria** pilot area evaluated the importance of ecological connectivity at water-retaining structures to protect the fish population.
Last but not least, the **Northern French Alps** identified new potential sources of hydroelectricity in mountains – the usage of drinking water and waste water pipe networks for hydroelectricity production. The results were discussed at the WP6 meeting at Pokljuka, Bled, Slovenia in October 2013 and at the MidTerm conference in Brig/CH from 12-13 November 2013.

“Municipalities need precise analyses.”

Dec 18, 2013

Interview with Eduard Brogli from the town of Brig-Glis. Brig-Glis is Alpine Town of the Year 2008 and observer for the recharge.green project

1. The mid-term conference of the recharge.green project was held in Brig Glis. What did you gain for your town?

The conference offered me the chance to gain insights into the energy projects of other Alpine municipalities. This valuable exchange of experiences provided me with new ideas for my own town.

2. What questions would you like to ask the project as an observer?

The conflict of interest between renewable energy and nature conservation is well-known. I believe it is important for the conflict now to be formulated in concrete terms, with concrete examples used to make a precise analysis of the how renewable energy sources can be developed proportionally in relation to the damage caused to the environment. Only then can we as a municipality judge whether the detriment to nature outweighs the benefits and thus decide to cease development of renewable energy. I can see this approach with recharge.green.

3. What is the benefit of the recharge.green project for municipalities?

The benefit for municipalities is strongly dependent on their scope for action. In France for example all waters belong to the state, whereas in Switzerland these are in the hands of the municipalities. We thus have a greater scope for action in Switzerland and we can use tools from recharge.green to develop an environmentally sustainable energy transition.