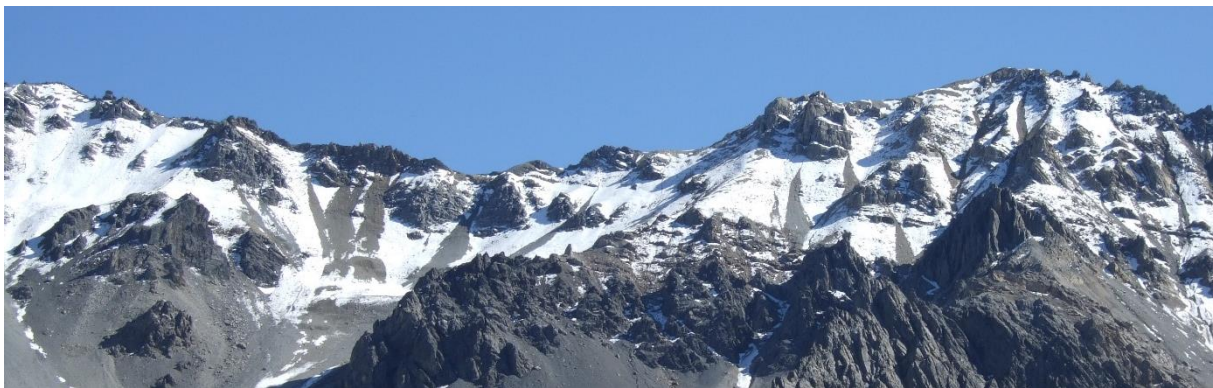


# Energy Platform Workshop 1

## Focus on building and housing policies

30<sup>th</sup> August 2013  
Bern, Switzerland



### The Alps as playground for “vernacular” experiments?

M. Hänggi, a Swiss journalist active in the thematic fields of climate change and energy, demonstrates, on behalf of examples from contexts in countries of the South that energy saving architecture has to take into account endemic materials and necessities – and is not just a question of money! He tries to give some general hints on so-called “vernacular architecture”, by showing the success of round designs that take into account the advantageous proportion of surface to volume in terms of heating and cooling.

M. Hänggi finishes his input by giving some alpine examples from Switzerland that demonstrate how the term of “sufficiency” can be understood in a liberal society: He mentions the “Alpine initiative” showing how “terms of use” can influence transport patterns and the recent referendum fixing a maximal communal share of second homes.

### The effects of national policies in the Alps

The comparison of national energy policies shows the diversity of measures taken, reaching from market-based approaches like in Italy (White Certificate system) or Liechtenstein (flexible incentive system reacting to changes in the market) to financial incentives (in Germany and Switzerland) and to “preventive strategies” of spatial planning, with Slovenia trying to push energy efficient spatial planning by guidelines to municipalities.

National policies in the building and housing sector generally do not make regional differences as far as the measures are concerned. Even in terms of policy outcomes no general alpine vs. non-alpine differences e.g. in the renovation rates could be made out. In case of Germany rather a West-East-gradient can be observed than an Alpine-non-Alpine gradient, whereby the States in the West with their higher share of house-owners generally make stronger use of incentives and offers in the field of building renovations than do those in the East. In Switzerland, first results of the building programme

show, that it is somehow more difficult to have the building owners in the mountain Cantons proceed to renovations, whereas in the urban Cantons more renovations can be observed. But it is difficult to say to what extent these differences are linked to the policy or to differences in regional wealth.

## Towards “alpine specificity” with regional examples and policies

P. Büchel from the Club Arc Alpin (CAA) shows that in the case of alpine huts every situation, due to its very geographic position (accessibility, altitude, climate etc.) requires specific solutions in terms of energy efficiency, even though certain generalisations are possible (e.g. cogeneration plants as adapted high-altitude systems).

The second input session shows, that it is only by innovative solutions that regions or municipalities can become forerunners in the field of sustainable construction:

- F. Weber from the Autonomous Province of South Tyrol demonstrates that, by a bonus on the building volume for ecological renovations, heating energy consumption has decreased regionally;
- the Rinka Center (3d prize of the architecture award “Constructive Alps” ) brings together a multi-functional building with the local context (materials) and tourism potentials;
- the State of Vorarlberg has only managed to get where it is by an intelligently designed participation procedure, working on value systems and their transformation.

## Taking up the key hypotheses in the Panel discussion

The panel discussion clearly shows the difficulty when it comes to finding “standard solutions” of energy-saving in the building and housing sector. The setting is clear and beyond controversy: We have to transform our building stock towards the “2t CO2 world” – and we start from a higher level in the Alps than outside (heating energy)! The panel experts give the following hints:

- turn the Alps a model region for sustainable buildings by defining **clear objectives** (e.g. the “100 sustainable tourism destinations” programme)!
- follow the “**zero energy**” and “**plus energy vision**” which offers opportunities to the Alps (in terms of value-added and of the effective use of resources)!
- conceive the Alps as a **transnational area rich in resources and ideas!**
- make use of the **Alpine Convention’s role as a facilitator** of change by making change attractive (e.g. by attributing prizes such as the Architecture Award “constructive Alps”)!

In his concluding statements the president of the Energyplatform, Michel Matthey, calls for concrete proposals to the ministers of the Alpine Convention: They are not yet visible and shall be developed on the basis of the Energyplatform workshops 1, 2 and 3.

# Energy Platform Workshop 2

## Energy production in the Alps

24<sup>th</sup> – 25<sup>th</sup> October 2013  
Lucerne, Switzerland



### Thinking the Alps in a global context

At the workshop 2 in Lucerne the discussion starts at a global vision: The climate scientist Lucka Bogataj made a link between climate change and energy: *What if changes in precipitation and temperatures affected the availability of natural resources, e.g. water?* She further puts a focus on the Alps in a global context, meaning that the policies of Alpine states / regions towards more renewable energies (e.g. by “energy autonomy” strategies) are contrasted by growing importations of goods with their embodied emissions. She asked the “Alps” to act locally but to think globally...

### Dealing with interest conflicts

Developing renewable energies is a top priority, but there are many interest conflicts. The inputs showed possible conflict patterns emerging in a context with more renewable energies:

- **highly-mechanised, large-scale renewable energy production schemes** especially for wood-energy that can lead to resource-depletion  
*(e.g. wood sector in the French Alps prone to accelerated forest-use cycles or the difficulty observed in different states and regions to integrate wind mills in the alpine landscape);*
- **the decentralisation of conflicts** as compared to fossil energy and large hydropower  
*(in Germany, “new renewable energies” that represent a series of small and reversible “landscape scars” contrast with the traditional charcoal mining and its large-scale impacts);*
- **the emergency of “green-green” conflicts** as renewable energies both can reduce CO<sub>2</sub> emissions of energy production and threaten biodiversity  
*(e.g. fears of deadwood losses and erosion risk with a higher level of wood use e.g. in protected or steep areas).*

In the discussion it was stressed that both potentialities and synergies must be considered in strategies for dealing with interest conflicts. This is also true if we talk about governance strategies for renewable energies.

#### Possible strategies for land-use conflicts

- **weighing up protection targets against energy potentials** in protected areas (e.g. zonation of protected areas into core and buffer areas for wind energy in Germany, regional approach for hydropower in the Canton of Uri),
- **compensating landscape impacts** by payments for protection measures (Germany in search for a national solution) or compensating between regions using /not using natural resources (ISCAR),
- **prioritising high-potential renewable energies** (hydropower in Slovenia and Uri)
- **avoiding energy production types with a high spatial impact** (e.g. free-standing PV in South-Tyrol and in Lake Constance energy region)
- **defining spatial priorities and criteria** such as “first outside protected areas”, “not above a defined sea-level” or “outside of settlements” (South Tyrol for wind energy, ISCAR),
- **building the renewable energy system on existing buildings and infrastructures**, such as solar installations (thermal and PV) on roofs and façades (Austria)

## Realising renewable energies in Alpine regions

In the inputs about energy planning processes in Alpine regions the shared keyword was “making change possible”. The discussions clearly showed that an energy transition requires a cultural change: Regional and local authorities, but also the general public must be given tools to manage the change, be it by financial assets or institutional resp. territorial arrangements.

#### Possible governance principles and motivation factors for energy transition

- **Creating common identification for energy transition** by attractive and realistic energy objectives (e.g. end use values, shares of renewable energies or “energy autonomy”) and by participative approaches (e.g. the development of energy strategies such as in Vorarlberg)
- **Giving spatial planning the role of a moderator of “energy transition”** (improving building standards towards easier realisation of district heating solutions or integrating landscape aesthetics e.g. wind energy visualisations)
- **Making people participate in economic success** (e.g. small concessions for hydropower for local people in South Tyrol or the concept of “communal solar power stations” in the French Vercors mountains)
- **Going for co- and multi-benefit measures** (e.g. combining incentives for renewable energy systems with the development of both a district heating and access to fibre glass in South Tyrol)
- **Compensating benefits between winners and losers** of renewable energy strategies (e.g. in Uri by a compensation between communities benefiting from hydropower concessions and those that do not)

## Take-home messages for Workshop 3 and the Core Group

In the final discussion, “guidelines” or a “hand book of the Alpine Convention” were proposed as a possible product of the Energyplatform’s work. The idea: identifying conflicts and synergies between renewable energies and landscapes, differentiating developing strategies and showing good practice measures. This idea shall be further discussed in the third workshop and in the frame of the Energyplatform Core Group.

The president of the Energyplatform, Michel Matthey, welcomes this idea and sees two main challenges:

- 1) Searching a framework for “energy transition” in the Alps including the aspect of decentred solutions in the field of renewable energies (e.g. solar and wind energy)
- 2) Better understanding “Alpine energy governance” and the linked cultural changes.

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# Energy Platform Workshop 3

## Energy systems in the Alps

13<sup>th</sup> February 2014  
Zurich, Switzerland



### The system dimension in research

In his input, Schaffner from ETHZ stresses the importance of cooperation between the fields of technology, economy and science in order to enable the development of sustainable solutions in future energy research. With regard to energy policies, Schaffner calls for political objectives (e.g. CO<sup>2</sup> objectives) and technology-neutral policies. As a local example of new energy systems, Schaffner mentions the project “Zernez Energieia 2020” which shows the role of alpine populations choosing the appropriate system for their context (e.g. changing the local energy provider, giving way to the analysis of the local production and consumption patterns).

### How to deal with the “localisation trend” in the Alps?

As far as **local heating and cooling systems** are concerned, different technical solutions are presented to ensure heat provision at the local level. The challenge will be to find solutions with a low spatial impact (contrarily to the “Danish system” with district heating based on large solar collector fields which was introduced by Nielsen).

When it comes to **balancing electricity production and consumption** and energy-saving grids at a local level, existing solutions such as e-mobility for electricity storage and smart electricity grids are to be elaborated further and adapted to the alpine context. In the case of e-mobility, the actual solution of “e-mobility to home” needs to be developed further towards “e-mobility to grid” solutions. This is a challenge especially in the mid-term, for integrating the growing share of new renewable electricity. The discussion showed that the challenge of implementing new solutions in given socio-political contexts might be as big as developing new grid and storage technologies.

#### **Paving the way for locally-oriented energy provision solutions (examples):**

- **developing local grid and storage solutions as a back-up** for the (trans-) national energy system (e.g. smart grids in Aosta valley “against” possible blackouts of large power plants)
- **balancing demand and offer** addressing the challenge of fluctuation in electricity production (example of ALPStore, that suggests using virtual power plants for prognosis and storage plan.)
- **developing and adapting local storage systems for peak-management** (e.g. by e-mobility for decentralised electricity storage)
- exchanging technical knowledge **to ensure provision on local level with a low impact on the environment** (e.g. exchange on DHC by RES, see [www.rhc-platform.org](http://www.rhc-platform.org)).
- **making energy “prosumers” accountable** for their production (e.g. by primes for peak-management)

## **The Alps producing and storing electricity for Europe?**

As far as the further development of pumped-storage plants is concerned, long-term investment in these plants is currently uncertain. Apart from that, the discussion showed that the Alps will hardly be able nor ready to store electricity for whole Europe. Still, the question of alternative storage technologies (e.g. power to gas) makes clear, that discussions are still to come.

The development of new transmission lines is questioned at the local level, as the representatives of the NGOs put forward in the discussion: Why should the Alps “carry the burden” of additional large energy infrastructures if they are already facing negative impacts of large hydroelectricity (e.g. income for electricity providers, rarely for local population; negative impacts on river ecology)? The question will also be how landscape impacts of transmission lines could possibly be reduced, e.g. by spatial planning or underground cabling (especially used for the low- and mid-voltage grid).

#### **“Doing the necessary” and doing it sustainably (examples):**

- **Developing solutions for short-term storage** besides the traditional seasonal storage by large hydropower
- **Supporting and sustaining the Alps’ role as an energy transmitting area**
- **developing criteria for sustainability of transmission infrastructure** (e.g. criteria for transmission lines in Switzerland: <https://www.news.admin.ch/message/index.html?lang=de&msg-id=48260>)
- **Encouraging the dialogue with the public** addressing European as well as local needs, finding balanced solutions and thereby rising awareness for the necessity to sustain large energy infrastructures
- **Addressing climate change** by developing and promoting infrastructure that is resilient to climate change impacts (e.g. better integration of sub-national grids in Slovenia or DHC cooling application for hotter summers).

## **Take-home messages for Torino 2014**

Workshop 3 has shown that it is generally acknowledged that efforts should concentrate on energy efficiency; still, energy consumption is remaining at high levels, meaning that intelligent grid and storage solutions will remain a priority in the future. The challenge will be to bring together the different spatial logics of energy systems acknowledging the fact that the (transnational) and the local/regional levels are complementary components in the new energy systems. In these systems the Alps should be able to draw benefits in terms of continued high levels of energy-security, the **conservation of high-quality landscapes and sensitive environments** (e.g. minimising impacts of energy infrastructures on sensitive birds and bats species) and in terms of **efficient storage and grid solutions** adapted to the topographic situation of the Alps. **Enabling and maintaining communication on a constant and interactive basis with the alpine communities** and populations is clearly a cross-cutting issue when developing grid and storage solutions, both on the (trans-) national and the regional / local level.