

ALPSTAR GUIDELINE

TOWARD CARBON NEUTRAL ALPS – MAKE BEST PRACTICE MINIMUM STANDARD



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PREFACE

Climate change is one of the key challenges of the 21st century, especially for the Alps and other mountain regions. In the Alps, temperatures have increased almost twice as much as the global average over the last century. And they are set to rise even more, especially if the residents of the Alps themselves continue to consume around 10% more energy per capita than the European average. Actually more and more Alpine municipalities, valleys and regions are oriented towards climate neutrality, the reduction of greenhouse gases, the better use of endogenous resources, the reduction of fossil fuel and the increase of renewable energy.

This guideline intends to give support to stakeholders and agents of change in order to learn from the best and not to re-invent the wheel over and over again. The focus is on cross-sectoral, integrative and participatory approaches. The guideline also considers possible negative impacts of carbon neutrality strategies: intelligent responses to climate change must not have negative effects on local and regional economy, nature and society.

Best practice of today have to become minimum standard in the near future if we want climate neutrality in the Alps be achieved within the next 40 years!

INTRODUCTION



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More and more areas are declaring themselves “energy”, “carbon neutral” or “climate regions”. Although they differ in many ways, they all pursue a single, ambitious vision: to become independent of fossil (and nuclear) energy imports. Pioneering areas include Güssing in Austria’s Southern Burgenland, where the European Center for Renewable Energy has its headquarters, the German bioenergy village of Jühnde and the Danish island of Samsø. These pioneers have shown how to do it, and many others are seeking to follow their lead. Aim is to use the energy more efficiently, to meet the own demand as far as possible with regional renewable energies and at the same time to stimulate the regional economy. Often closely linked with this is the objective of becoming a carbon- or climate-neutral region.

The corresponding initiatives are bearing various names: e.g. energy autonomy, energy self-sufficiency, CO₂-neutrality etc. These terms are not used in a strict scientific sense. They stand for the diversity of approaches and give a first impression of the long-term goals of these initiatives. We will not discuss the terminology, neither do we comment on the usefulness of the chosen strategies to achieve the long-term goals (Abegg 2010, Hoppenbrock & Albrecht 2010). It is important to note, however, that the initiatives differ in many respects: e.g. starting position, orientation, objective, scale and structure etc. Due to the heterogeneity of the initiatives it is not possible to formulate “one-size-fits-all” guidelines. It is possible though to describe the general process and to name the main barriers and success factors.

We will not distinguish between climate and energy regions, or climate and energy concepts, respectively. Climate initiatives primarily aim at reducing greenhouse gas emissions, in particular CO₂. CO₂ emissions are closely linked with fossil energy sources. To reduce CO₂ emissions basically means to change the energy system. Climate concepts are therefore – for the most part – energy concepts (Kucharczak & Schäfer 2010), although they also integrate activities in other sectors (see below).

As a consequence we do not talk about energy autonomy or CO₂-neutrality but rather use the term sustainable energy initiatives. We will mainly focus on bottom-up approaches on the regional level. Addressees are regional stakeholders who want to initiate a new or reinforce an on-going transformation process towards a more sustainable regional energy system.

This document is structured as follows: In chapter 2 we will introduce the term sustainable energy system. Chapter 3 provides initial information focusing on the question of what to consider before you get started. Chapter 4 describes the most important building blocks that make up the sustainable energy process. Chapter 5 looks at barriers, and chapter 6 deals with success factors. Chapter 7 draws conclusions. A series of good practice examples is presented in chapter 8. Finally, chapter 9 contains the literature and links to useful websites.

SUSTAINABLE ENERGY SYSTEM

Overall goal is to establish a climate-friendly and sustainable energy system. To address this challenge, three key questions have to be answered:

- 1) How can we change life styles and consumption patterns?
- 2) How can we save energy and use energy more efficiently?
- 3) How can we produce energy more responsibly?

Consequently, three basic strategies are required to deal with these questions: 1) sufficiency strategy, 2) efficiency strategy and 3) consistency strategy. Only by combining these strategies the final goal of establishing a sustainable regional energy system can be achieved (Benz et al. 2010).

Sustainable energy initiatives, therefore, go way beyond the energy sector. It involves the way we live, work, commute and spend our leisure time. Related topics, in particular housing, mobility and spatial planning, must be incorporated. Action is needed in different sectors. The overall approach, however, should be a holistic one and calls for the integration of sectoral activities.

A sustainable energy system also goes beyond de-carbonization. The expansion of the renewable energy production, for example, may lead to various land-use conflicts (e.g. Akademien der Wissenschaften Schweiz 2012). From an ecological point of view, the following areas are particularly fraught with conflict (Abegg 2010):

- further expansion of hydropower, which clashes with the wish to protect the last remaining natural bodies of flowing water,
- the construction of large standalone installations, such as solar and wind power stations,
- a possible competition for land between the production of energy crops and food,
- the overuse of forestry resources in non-sustainable management practices and when “wood for energy” is grown in monocultures.

The problems can – to some extent – be defused by focusing very clearly on energy saving and energy efficiency. Every kilowatt-hour that is not consumed does not need to be produced and consequently does not cause conflicts around its production.

Furthermore, biomass-fuelled combined heat and power stations, for example, must be designed in a way that avoids unnecessary haulage and ensures that the capacities can be fully utilized using local and regional resources. In this connection, spatial planning levels and system boundaries must be mentioned: Choosing too small a scale with small units can mean that inefficient measures are promoted and implemented and that installations such as wind farms are built, which could be operated more economically elsewhere. All this speaks in favour of concentrating on the most suitable locations, of cooperation between different regions and reconciling the interest of energy and other policy goals (e.g. nature and environmental protection).



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BEFORE YOU GET STARTED

Do not reinvent the wheel

There are many regions on the way to establish a sustainable regional energy system. A great deal can be learnt from the experiences of the pioneers, especially in those regions that are still in the initial phase. These regions would therefore be well advised to consult any available information and to talk to (or even visit) the pioneers. Best-practice examples are available in online databases too (e.g.: www.alpstar-project.eu, www.cipra.org/en/cc.alps, www.klimabuendnis.at etc.)

Check out existing knowledge

A large amount of information is available. Check out different sources of information: there are guidelines, manuals and online tools to name just a few (see chapter 9). Expert knowledge is available from governmental, semi-governmental and private institutions – this includes research institutes, energy agencies and advisory offices. Or become an expert yourself and get trained as a regional energy manager.

Participate in existing initiatives

It is highly recommended to participate in existing energy and climate protection initiatives, e.g. the European Energy Award, the Austrian e5 Program for Energy-Efficient Communities, the Swiss Energy City Program (Energjestadt, Cité de l'énergie, Città dell'energia) and many others. They are a good way of getting started, since they are all well established and can provide advice; they have knowledge and appropriate tools and cover important areas that play a key role in achieving energy goals. Another option is to take part in research projects.

Look out for external funding

As well as technical assistance, financial support is also available at EU, national and regional level. It may take the form of indirect funding through programs to promote increases in energy efficiency and renewable energies, or direct funding, as is the case in Austria (Austrian Climate and Energy Fund: Climate and Energy Model Regions), Germany (German Ministry of Food, Agriculture and Consumer Protection: Bioenergy Regions) and France (Rhône-Alpes: "territoires à énergie positive").

A STEP-BY-STEP PROCESS

In recent years a number of guidance documents and manuals have been written on the subject (e.g. Neges & Schauer 2007, Ruppert et al. 2008, Schauer & Bärnthaler 2008, Tischer et al. 2009, Benz et al. 2010, Covenant of Mayors 2010, Kompetenznetzwerk Erneuerbare Energietechnologien 2010, Späth et al. 2010, Fink 2011, Müller et al. 2011). Such publications are useful for regions, helping them to get started and giving pointers about possible directions they might take. They illustrate how the process can be structured at local and regional level, pointing out what to consider and what to avoid.

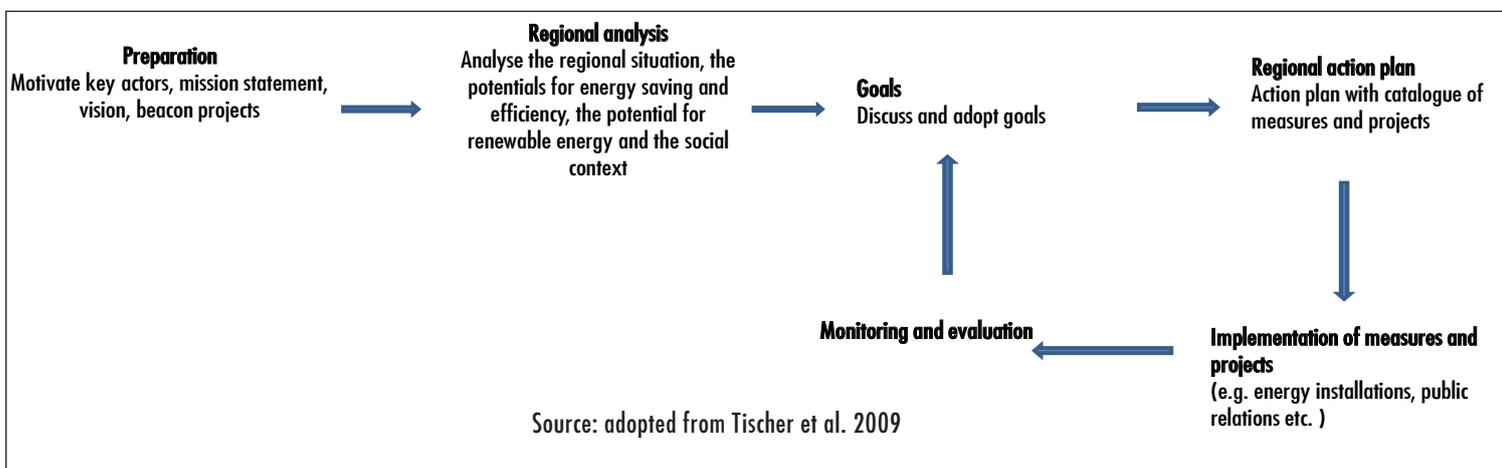
Due to the heterogeneity of the respective initiatives, however, it is very difficult to formulate general guidelines. Benz et al. (2010) argue that there is no such thing as a silver bullet. The “right way” has to be defined for each region individually. It is possible though to describe important steps on the way to establish a sustainable regional energy system.

Creating such a system is a very complex process. Müller et al. (2011), based on Rogers’ innovation-decision model (2003), distinguish five phases/steps:

- Initialization & preparation (knowledge stage)
- Analysis (persuasion stage)
- Strategic decision (decision stage)
- Planning & Implementation (implementation stage)
- Monitoring & evaluation (confirmation stage)

Tischer et al. (2009), on the other hand, divide the process into six different phases (Fig. 1). It is important to note that, depending on the starting situation and the objective, the priority areas may vary in the individual phases. Often the phases will overlap. That means that steps may take place simultaneously or as part of a cycle. Monitoring and evaluation impact on the action program and implementation, so that feedback effects also have to be taken into consideration.

Fig. 1: Process to create a sustainable regional energy system





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Elements of a sustainable energy concept

Preparing a regional energy concept is an integral part of the process. This concept should consider the following minimum requirements:

- Current status: latest data on regional energy consumption and regional energy production;
- Target status: estimation of the demand trend and the potentials for energy saving and efficiency and for the production and use of renewable energies;
- Context: political, social, economic and ecological environment; relevant actors and interest groups; how key people see the issue, their interests and opinions.

On the basis of the concept, practical implementation recommendations and a number of measures are developed. At the same time, an initial assessment of the positive effects anticipated can be made, based on energy and CO₂ saving, regional value added etc. It is important to remember to include costs and the question of funding. Furthermore, responsibilities must be defined, a timetable drawn up, and milestones set out.

The concepts can be divided into an analytical and strategic part. The analytical part includes

- 1) the current energy balance;
- 2) a potential analysis;
- 3) socio-economic and environmental aspects, and
- 4) an analysis of costs and financing.

As these analyses are of a rather technical nature, it might be wise to rely on the knowhow of external consultants (Müller et al. 2011). Key elements of steps 1-3 are presented below (see also Kucharczak & Schäfer 2010).

Current energy balance

Energy consumption	by sector: households, public sector, industry, services by type of energy: electricity, heat, fuel
Energy production	Renewable (solar, water, wind etc.): electricity, heat, fuel Traditional (fossil/nuclear): electricity, heat, fuel
CO ₂ Balance	Bottom-up, top-down or hybrid approaches

Potential analysis

Energy consumption	Trends in energy demand (scenarios) Energy saving potential (including sufficiency) Energy efficiency potential
Renewable energy production	Theoretical, technical and sustainable potential by source: biomass, geothermic, solar, water, wind by type of energy: electricity, heat, fuel

Socio-economic and environmental aspects



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Important aspects Demography, land-use, settlement, traffic patterns, ownership and energy efficiency of the built environment etc.

Müller et al. (2011: 5807) highlight the importance of analyzing the costs, benefits and funding options:

“This analysis needs to carefully consider regional opportunities as well as regional challenges, rather than relying on delocalized knowledge or general public enthusiasm for sustainable energies and energy efficiency. An important element is researching where public funds are available for co-financing energy generation and energy efficiency projects. In addition to public funds, private people need to be motivated to invest ... The involvement of private finance can range from building owners, who make their buildings energy efficient, to energy companies willing to finance large-scale energy plants.”

The strategic part deals with implementation. Key to the implementation strategy is the catalogue of measures. Kucharczak & Schäfer (2010) suggest to identify categories (in order to structure the various measures) and to define the characteristics of the various measures. Basic criteria are:

- description: objective, motivation, target group
- potential to influence implementation (active, activating, passive)
- energy saving, energy efficiency and/or CO₂ reduction potential (impact)
- priority, time schedule (milestones), evaluation
- definition of responsibilities
- technical and economic feasibility
- environmental sustainability
- expected barriers

All these analyses can be very detailed. In practice, however, they may be less comprehensive and compromises have to be made – either because what people would ideally like is not feasible or because there is insufficient data, time and money for a detailed analysis.

Networks, structures, tasks and responsibilities

The creation of a sustainable and climate-friendly energy system involves pursuing broad-based and long-term goals. These goals, which are closely connected with the economic, ecological and social development of a region, can only be achieved by broad consensus. According to Tischer et al. (2009), it is essential to create structures that:

- unite the diverging social forces behind the goal of the initiative;
- sustain the activities in the long term; and
- take both economic aspects and the public interest into account.

“To ensure the long-term survival of an initiative ... economically sustainable structures are also necessary. To create them, it is essential to recruit support of business in the region. However, during the implementation of the process, tasks emerge that are in the public interest, i.e. the wellbeing of the entire region ..., its natural features and socio-cultural character. Thus, it is a question of also involving and coordinating any ideals-driven people” (Tischer et al. 2009: 104).

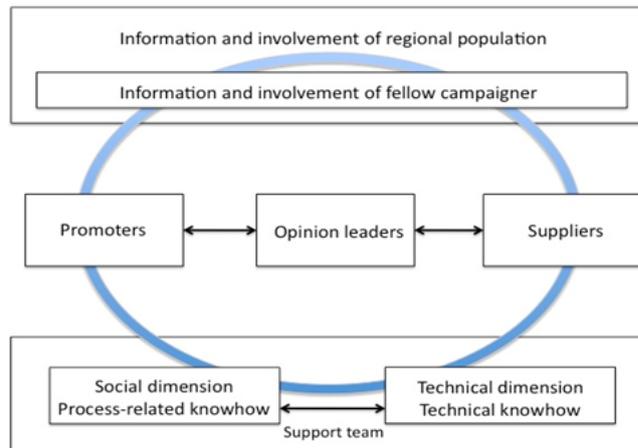
The authors therefore propose a dual structure:

- a heterogeneous network to provide moral support to the initiative. Often an association is set up to represent all the individuals and institutions interested in the process; and
- economically focused structures. Here anything is conceivable: from a loose form of cooperation or the formation of energy clusters, through to the creation of a sustainable energy holding.

This structure is complemented by two more elements: an operational unit, such as a coordinating office, and the “forward thinkers”, who have primarily representative and strategic responsibilities.

Similarly, Schauer & Bärnthaler (2008) suggest a “socio-technical support model” to drive the process (Fig. 2). A group of opinion leaders, suppliers and promoters takes the centre stage. The regional population is involved through information and events, and a support team is guiding the process (including key players). Main task of this team is to guarantee that both the social and the economic-technical dimensions of the process are fully (and equally) incorporated.

Fig. 2: Socio-technical support model



Source: Schauer & Bärnthaler 2008

“Forward thinkers” (Tischer et al. 2009) and “opinion leaders” (Schauer & Bärnthaler 2008) play an important role: In many initiatives there is a small group of people whose dedication to the cause is above and beyond the norm. They are the people who have a decisive influence on the development. They come up with the ideas and are the driving forces behind the initiative. They take care of the initiative’s strategic development and act as ambassadors for its ideas.

The division of tasks and responsibilities is dependent on the actors involved and on the institutional background of the initiative, and may vary considerably. It is important to set up a professional project management. The volume of work involved in creating a sustainable energy region quickly reaches a level that can no longer be dealt with on a voluntary basis. A central coordination office and/or support team is therefore required to manage the day-to-day business. Furthermore, it is crucial to involve the regional actors (population, businesses, administration etc. – particularly those who are willing to actively participate) and to ensure a continuous monitoring and evaluation of the initiative.

BARRIERS



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Throughout the process of establishing a sustainable regional energy system there will be a need to overcome doubts and opposition. Knowing where potential dangers may lurk makes it easier to deal with them (Neges & Schauer 2007):

- Time and money: the amount of time and money that will need to be invested in successfully creating a sustainable energy system is high and should not be underestimated. Furthermore, people's commitment will need to be sustained over a long period of time if the goals set are to be achieved.
- Challenging frame conditions: the lengthy decision-making processes in political bodies and the often un-resolved question of long-term funding must not be forgotten.
- Opposition: any change, no matter how convincing, will always trigger opposition. It might come from interest groups challenging the installation of renewable energy plants, from individual municipalities wanting to opt out because they fear additional costs or from energy utility companies wanting to hold onto their current business model of selling as much fossil energy as possible.
- Competitiveness: when economic self-interest or political wrangling take centre stage, the view of the bigger picture is obscured. The ensuing conflicts hamper or delay both planning and implementation.

What can be done to prevent these dangers? Put in place a broad-based, independent ownership structure, a broad-based and long-term financing model, a clear division of the different tasks and responsibilities, a pragmatic and goal-oriented approach, a critical process monitoring, a systematic information campaign to win hearts and minds – and add in a great deal of staying power and persistence.

SUCCESS FACTORS



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Recently, a number of factors have emerged as being conducive to the development of successful sustainable energy initiatives (e.g. Neges & Schauer 2007, Benz et al. 2010). The following factors are essential:

- A convincing vision that has broad public appeal and can unite people around it. The initiative must be well grounded and help to strengthen a sense of regional identity.
- A clear implementation concept with realistic goals. Building castles in the air is of no use; instead it is important to divide the process into manageable stages, and from the very outset work towards quickly visible and quantifiable results.
- Committed individuals who support the process and drive it forward. In most cases, it has also proved helpful to incorporate the work of local/regional politics (e.g. local/regional council resolutions).
- Good teams that perform their duties responsibly. Trust is important and must constantly be reaffirmed by the actions of all concerned.
- Professional communication to reach both the inner (people directly involved) and the outer circle (interested parties within and outside the region).
- Secure long-term financing. A boost from government funds is very helpful. However, in the medium term, care should be taken to mobilize as much capital as possible in the region itself.
- Sound structures that can cope with the diverse tasks. It is also important that they are adaptable and able to evolve, in other words that they are conducive to a “learning region”.

The initiatives’ success also depends on the underlying concepts (Fink 2011). Are we talking about a simple reduction in energy consumption and greenhouse gas emissions? Or are we aiming at energy self-sufficiency, a 2000 Watt Society or CO₂-neutrality? The respective goals including timeframe must be clearly defined. The same is true for the system boundaries, for example:

- Does the system include all sectors? Transportation is often taken out of the equation, be it partially (only mobility within the region is considered) or even fully (mobility is not considered at all).
- Does the system include embodied energies and the related CO₂ emissions? The incorporation of embodied energy would largely increase the amount of emissions (Walz et al. 2008).
- Does the system allow for CO₂ compensation? CO₂ compensation, which is a hot topic by itself, would largely enhance the opportunities to reach certain goals.

Furthermore, the initiatives' success depends on the impact of the suggested reduction measures. Walz et al. (2008) distinguish between the reduction effect (e.g. gain in energy efficiency through the implementation of a certain measure) and the realization potential (e.g. chance that this measure is really going to be implemented). Information on the reduction effect can be gained from literature and expert knowledge; information on the realization potential, however, is drawn from a series of assumptions. These assumptions are subject to huge uncertainties. From a regional perspective, these uncertainties become even more important as the realization of the potentials is dependent on factors that cannot be controlled within the region: e.g. technological progress, energy prices or legal regulations.

Basically, we are talking about a numbers game. The concepts "prove" that the pursued goals can be achieved. But the numbers show "only" what is possible. Ambitious goals such as a 2000 Watt Society or CO₂-neutrality might be challenging to achieve (see Walz et al. 2008 and Schmidt et al. 2012 for critical assessments). Ultimately, only action will tell whether or not the sustainable energy initiatives will be able to succeed.

CONCLUSIONS

The achievements of the leading regions in the field of sustainable energy systems are impressive. The successes are based on the perseverance with which the different actors have pursued a common vision, and on a will to achieve an across-the-board conversion of the energy system.

Regional economy, energy policy and climate protection constitute a convincing combination of motives for taking action and encouraging the desired transformation. The benefits of such a transformation, in particular the regional value-added argument, can be used to draw together the interests of all stakeholders.

A convincing vision and clearly defined concepts are required. Many concepts are based on the principle of the "journey is the goal". This might be perfectly adequate at the beginning of the process. As the transformation progresses, however, these concepts must be made more precise and specific in order to formulate effective goals.

Regional sustainable energy initiatives may share a common vision, but otherwise they differ in many respects. Due to the heterogeneity of the initiatives it is very difficult to formulate generally accepted guidelines. It is possible though to describe the general process and to name the main barriers and success factors.

Keep in mind that you do not have to reinvent the wheel. You can rely on the valuable experiences of the pioneering regions. Check out the existing knowledge (there is a large amount of information from many different sources), participate in existing initiatives and look for external funding.

Technically, the creation of a sustainable energy region rests on increasing energy efficiency of the supply and the demand side, realizing the endogenous potential of renewable energy sources and relying on a decentralized energy system.

Practically, such a transformation requires administrations and civil society actors to initialize and develop projects on a regional level, ensure their acceptance and support by the regional population and implement the projects in collaboration with relevant actors.

Often, priority is given to the technical aspects. But equally, if not more, important are the social changes that go with this transformation. Ultimately, it is people who are decisive for success or failure of a project. This accords great importance to the social aspects: from awareness building to communication and participation etc.

The creation of a sustainable energy system goes beyond de-carbonization. The expansion of the renewable energy production may lead to land-use conflicts. An initiative, however, can only be classified as genuinely sustainable if it also integrates the interests of other policy sectors (e.g. nature and landscape conservation).

The creation of a sustainable energy system also goes way beyond the topic of energy. It involves the way we live, work, commute and spend our spare time. Ultimately, it is nothing short of a wholesale structural change: a conversion of an entire region to sustainability.

GOOD-PRACTICE EXAMPLES

Energy Future Vorarlberg (A)

Short description

The main aim of the Energy Region Vorarlberg is energy self-sufficiency by 2050. The basis is to be created with concrete measures implemented by 2020. The four main pillars are saving energy, energy efficiency, renewable energy and research, development and education.

Facts and figures

Time & duration	From 2007 until (at least) 2050
Principal field:	Energy Secondary fields: Development, education
Spatial scale:	Regional (small scale)



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Objectives

The official goal of the state government of Vorarlberg is to make Vorarlberg an energy autonomous region by 2050. The second goal is meeting the European 20-20-20 targets – which mean 20 % CO₂ reduction, a 20% share of renewable energy, and 20% more energy efficiency by 2020 – at the local level. A concrete package of measures, the so-called “101 measures for our grandchildren” should help meeting European and national targets as well as reaching energy autonomy.

Activities & Results

The energy autonomy process includes a variety of activities:

- A vision building process
- Workshops and discussions
- Citizen councils to evaluate and integrate the opinions of citizens
- Elaboration of measures
- A process of implementation with institutional members
- The start of a joint process with citizens and (social) networks to identify and develop their areas for action and promote behavioural changes

Interview with Adolf Gross, Energy Future Vorarlberg

What is the status of the process?

At the moment concrete measures and their implementation are important. It is crucial to exploit the catalogue of “101 measures for our grandchildren” and to ensure that the process itself stays lively. Feedback is very important. The biggest risk is to disappoint those people who have invested a lot of their own time. That is also why it is important to make our successes visible.

Some examples where we stand today: We have a lot of renewable energy, the share of biomass in heating is 25% and there are more than one hundred biomass district heating systems. The share of bicycles in traffic is around 17%. One third of all communities take part in the programme of energy-efficient communities and in the municipalities passive house quality has become a common standard. Most new buildings meet at least the low-energy standard, and we have the worldwide highest density of passive houses (almost 30% of all new dwellings meet the passive house standard).



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What have been the success factors?

One important factor was that the topic of energy was structurally and socially already well-established in the region of Vorarlberg. For example, there has been already an energy consultation for several years; this helped a lot at the beginning.

Another factor was the participative process, which was planned and implemented very carefully. We as project leaders never changed topics on our own. The dialogue with politicians and the fact that local politicians were prepared for and open to a dialogue as well as the dialogue with the population helped to create a high level of identification with the issue. I think without this process the decision of the provincial parliament would not have been possible.

Other success factors were the right moment – today, with the economic crisis, it would have been harder - and the availability of the necessary financial resources. The financial aspect is especially important as a guarantee to finish the process; as mentioned above it also prevents disappointment among the population. Our flexibility in adapting the process design when it was not effective and adequate was an important success factor as well. Back to politics: that policy makers “allowed” the process to take its course and did not try to actively prevent it was essential.

What have been the main barriers and problems?

It was hard finding the right ‘pace’ for the working groups –some wanted to discuss issues in more details, others wanted to proceed to the next topic. It was also a major challenge to make it clear to everybody that the Energy Future Vorarlberg is a common process, and not just a process of the provincial administration. I think we are still lacking a more active understanding of democracy – and an understanding that to shape our future means joint and individual responsibilities. All in all, it was an unusual process, especially for lobbies, because they were not invited at the beginning. This kind of work really needs a change in culture.

Do you have any recommendations to those who start a similar development process?

Yes, I think the process itself is very important and has to be coached and accompanied very well. Communication with the population is a key issue. Time is an important factor as well: you can only move fast at low speed.

Climate plan Grenoble conurbation (F)

Short description

The local climate plan sets targets for reducing emissions of greenhouse gases for the years 2014, 2020 and 2050 on the territory of Grenoble Alpes Métropole, which has committed itself to going beyond the European objectives. The second phase of the plan started by adopting a new charter consistent with global climate and energy issues which invites all partners to commit themselves to quantitative targets for reducing emissions of GHG and energy consumption, and promoting renewable energy.

Facts and figures

Time & duration: Start date: May 2005, Duration: In progress
Principal field: Energy Secondary fields: Transport, buildings & construction
Spatial scale: Regional (small scale)



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Objectives

After the results of the period 2004-2007, the Local Climate Plan has set the following objectives: (1) reduction of greenhouse gas emissions of at least 20 % by 2020 compared to 2005 levels, by decreasing energy consumption per capita by 20 % and increasing renewable energy production in the territory to 16 % of total energy consumed (instead of 8 % in 2007); (2) action on climate change adaptation, particularly to limit the effects of higher temperatures and low night-time cooling in some urban areas. The intermediate objective is to reduce the greenhouse gas emissions of the territory by at least 14% by 2014 compared to 2005 levels, both for the bigger emitters and for other sectors (residential, transport, tertiary, agriculture and small industry). In other words, the emissions will be under 2 million t CO₂eq/year. This objective means to be symbolically less than 5 t CO₂eq/year/capita in the area. As a reminder, Factor 4 corresponds to emissions below 2 t CO₂eq/year/capita in 2050.

Activities & Results

The climate plan has three components: engaging key stakeholders (the partnership approach); mobilizing local actors around common objectives; and making their actions visible and coherent. Endorsing a charter of commitment for 2009-2014, they engage on a voluntary basis, setting their own targets. Coordination, assistance and monitoring are provided with the assistance of the local agency for energy and climate. The observatory monitors consumption and emissions on the territory. All the partners meet in a forum every six months. The scientific council, composed of renowned experts in the fields of science, technology, economics, finance, sociology, urban planning and housing, advises the Metro (Metropolitan Region) on its policies, aiming at the «Factor 4». - Implement the action plan of the Metro: the internal process, to meet the commitments of the Metro. It is structured by the Cit'ergie label - Engage citizens: the public process, to mobilize, support, and inspire action for the citizens .

Interview with H el ene Poimboeuf, Grenoble Aples M etropole

What is the status of the process?

The Metro has been re-audited in October 2012 and awarded with the Cit'ergie label with a higher standard. A new Charter is to be signed by the 58 partners during the event "Assises de l' nergie "; among these 40 partners will commit themselves to specific objectives (CO2 and KWh). The private and social building refurbishment operation is the most ambitious in France. Actions in the field of mobility are on-going. Communication activities are beginning (for children and the general public).

What have been the success factors?

A very good network of active partners and municipalities, a very ambitious plan and ditto expected results. In the field of mobility, our actions are very successful.

What have been the main barriers and problems?

First of all, the legal status of the lead partner. While it has a very ambitious plan, the project leader (the Metro) does not have the jurisdiction to be active in all the areas (for example energy production and supply). Each municipality is implementing its own policies. Therefore there are a lot of small individual projects and a "big common project" is missing. The Metro sees itself as the animator of the plan but not as a project leader.

The field of urban planning is very new for the Metro, and it needs more reference work and experience.

Another problem we face is that the costs of refurbishment are too high. As a result the ratio insulation/CO2 saved is not very good; the Metro needs to insulate its own buildings better for the sake of its image .

Do you have any recommendation to those who start a similar development process?

Think about common projects that unite all partners (lead partner, municipalities, companies, associations, etc.) , and are eventually implemented by the lead partner.



  Eric Vazzoler/Zeitenspiegel

Achental Bioenergy region (D)

Short description

The Bioenergy Region Achental aims at expanding the role of renewable resources in the economy, building up regional networks as well as improving regional rural development.

Thus, the focus is on projects that enhance bioenergy and are having a positive impact on the overall development of the region as well as on climate change mitigation. Projects focus on small scale, decentralised solutions which can be easily integrated into existing economic structures and which have high energy efficiency as well as an optimal cost-benefit ratio.

The priorities are renewable energy from wood (wood chips, pellets) and decentralised biogas production. The touristic value of bioenergy is also an important part. One core area is knowledge transfer and the development of qualified human resources. Moreover, regional actors are to be motivated to participate in regional development. The project is owned by the Biomassehof Achental GmbH & Co.KG, a subsidiary of Ökomodell Achental e.V.

Facts and figures

Time & duration June 2009 – May 2012, extended until 2015
Principal field: Energy Secondary fields: Land use
Spatial scale: Regional (small scale)

Objectives

The short-term goal of the project is to promote the use of bioenergy and further development of measures in this area. This is to be achieved through flagship projects that can be transferred to other regions.

The long-term goal is energy self-sufficiency: the intention is to switch the entire energy supply – heat, electricity and vehicle fuels – to renewable sources by 2020.

Activities & Results

1. Construction of a combined heat and power plant for district heating in Grassau
2. Running a focused public relations campaign
3. Exploitation of the tourism value of measures, offering for example visitor packages and environmental education tailored to selected target groups



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Interview with Wolfgang Wimmer, Bioenergy Region

What is the status of the process?

At the moment we carry out 12 flagship projects which are at different stages (from preparation up to implementation). We extended our framework project for three further years until 2015.

What have been the success factors?

First of all you need the acceptance of decision-makers, especially local councillors. The idea has to be firmly grounded and has to enjoy a high level of public acceptance. You also need a broad-based and persuasive public relations campaign.

What have been the main barriers and problems?

Our main challenges have been to motivate the key decision-makers, especially local councillors. In order to implement a broad-based initiative, you need broad-based support. It is not always easy to find competent people to join the campaign and people who are good at turning words into action. Good ideas are one thing, but you have to be able to find ways to get the financing for their implementation. In other words, funding has a positive impact on decision-making. We always tried to solve problems conjointly, in order to finally achieve the implementation.

Do you have any recommendation to those who start a similar development process?

You need a vision. You have to be able to show people where you are headed, make it clear what goals you want to achieve. You should not spend too long on talking and developing concepts. It is important to produce visible results fairly promptly. Success creates acceptance. And you have to work towards getting it well established, particularly with decision-makers. Furthermore it is very positive to be well connected with the municipalities; it facilitates access and helps to find multipliers.



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City of Bozen – Source of Energy (I)

Short description

The South Tyrolian City of Bozen wants to be CO2 neutral by 2030. Therefore the City of Bozen has passed a Climate Plan. The main topics are sustainable transport, measures for energy-efficient buildings and infrastructure, as well as production of renewable energy.

Facts and figures

Time & duration	2010 - 2030
Principal field:	Buildings and construction, energy, spatial planning
Spatial scale:	Regional (small scale)

Objectives

Bozen is climate neutral by 2030.

Activities & Results

- Carrying out energy-efficiency improvements of existing buildings and tightening regulations for new buildings
- Transport - increase pedestrian and bicycle traffic and the use of public transport:
 - Increase of public transport, including trams
 - Creating a network of bicycle tracks
 - Pedestrian-friendly organization of public space
 - Good car sharing offers
 - Improving local recreation possibilities
- Renewable energies: photovoltaic and other solar power facilities and new run-of-the-river hydro-electric power stations
- The report "Bozen – fountain of energy" with 50 measures for a climate neutral city.
- The pilot project of the district of Drususstrasse:

This district is to be energy autonomous within few years, managing without external energy supply by using local renewable energy like geothermal and photovoltaic energy.



© City of Bozen

Interview with Helmut Moroder, City manager Bozen/Bolzano

What is the status of the process?

A lot of measures are still in the phase of planning, some at the beginning, others at the end. The implementation phase of other measures has already started.

What have been the success factors?

The main success factor is that it is worth it and that you can save money with measures which also have a positive impact on climate. We want to reduce our current energy consumption by about 50%, the rest we need should be covered by renewable energy. By doing so, Bozen can all in all save about 160 million euro on energy expenses. This money can be used for investments in order to strengthen and empower our local economy.



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What have been the main barriers and problems?

It takes time until all stakeholders can agree on a new idea.

Do you have any recommendation to those who start a similar development process?

It is important to analyse the system on which you want to work, but not on hundreds of pages – just identify the most essential issues. It must also be profitable in terms of money, the key reason should not be climate change – and already those economic reasons are convincing.

Energyregion GOMS (CH)

Short description

The Goms energy region is initiating renewable energy and energy efficiency projects in order to support regional sustainable development. Various beacon projects show the potential of local and regional initiatives.

Facts and figures

Time & duration: Start date: 2007, Current status: ongoing horizon 2030

Principal field: Energy Secondary fields: Buildings & construction; Land use, Tourism, Industry & services

Spatial scale: Regional (small scale)

Objectives

The overall objective in Goms is sustainable regional development. The production of renewable energies and the efficient use of these energies are very important. «Energy autonomy», however, is no longer an official goal. The regional key player is the association «unternehmenGoms», a network organization. Local knowledge and partnerships for regional sustainable development are other crucial resources.

Activities

- 1) Development & planning of projects, from the first idea to the final implementation
- 2) Project support & monitoring: knowledge transfer, consulting, coaching etc.
- 3) Fundraising
- 4) Public relations and awareness-raising

Results

- 1) Publication of a regional energy concept as a central tool for decision making
- 2) Several beacon projects are running. There are three categories of projects: energy production, energy efficiency and awareness-raising with corresponding programmes. In the energy production category, for example, there are solar energy, wood for energy, wind and hydropower programmes. In the field of energy efficiency, there are numerous activities focusing on energy efficient buildings, appliances and vehicles (e.g. «alpmobil»).



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Interview with Roger Walther, Dionys Hallenbarter

Energy region Goms



© Energieregion Goms

What is the status of the process?

The first two, three years of communication with the region and bringing our vision and ideas to the people is over. But we still engage in a lot of external communication with people who are interested in our project. Now we have to prove and implement our projects and concepts – and we are doing so.

What have been the success factors?

1. You need people who want to change things. People with genuine passion, people who are movers and shakers. It is also important that the project is firmly grounded in the local population and that there is good networking – both in the region and beyond the cantons.
2. One the one hand you need a vision; on the other you have to get projects up and running quickly. It is important to have tangible projects that demonstrate visible results.
3. Good and intensive media relations.
4. Continuity of actions
5. Rear cover – also integrating different groups from tourism and industry to nature- and landscape conservation. In this way you can create additional benefit for the region.

What have been the main barriers and problems?

1. Time: creating an energy region requires a huge time investment in terms of commitment, perseverance, powers of persuasion and leadership.
2. Empathy: it is not easy to recognise the processes of change the numerous actors have to go through and to provide supervision and focused leadership.
3. Financing: securing financing for the association is a complex problem that needs a very creative approach. It is easier to access funding for the individual projects.
4. Our small region is good and bad at the same time – in terms of money you probably have less; in terms of networking and advancing in the projects it is easier.

Do you have any recommendation to those who start a similar development process?

You need a convincing vision. Independence and self-sufficiency are good arguments. They go down well and are easy to understand. You should not get too weighed down with theory, but start on implementing ideas straight away. Fast results build trust; they show that things are moving forward and that the vision can become reality.

I think as well that exchange with regions and people who do similar things is very important – it is also good to look out for partners or companions with similar problems and framework conditions. Not to mention technical knowledge and potential which have to be analysed. And one question everyone has to ask herself/himself is: what kind of vision do I have and where I want to go?

ADDITIONAL INFORMATION

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Links

Alpstar (EU): www.alpstar-project.eu (en/de/fr/it/slo)

Benchmark Kommunalen Klimaschutz (DE): www.climate-cities-benchmark.net (de)

Bioenergie-Regionen (DE): www.bioenergie-regionen.de (de)

BioRegions (EU): www.bioregions.eu (en/fr/bg/cs/lv)

Bodensee-Alpenrhein Energieregion (AT, CH, DE, FL): www.baernet.org (de/en)

CarboMark (local voluntary carbon market) (IT): www.carbomark.org (it/en)

Chambéry Plan Climat (FR): www.chambery-metropole.fr/3406-plan-climat.htm (fr)

CIPRA International cc.alps (Alps): www.cipra.org/en/climate-projects/cc.alps/compacts (en/de/fr/it/slo)

Climate Alliance, Klimabündnis, Alianza del Clima (Europe): www.klimabuendnis.org (en/de/es)

Climate Compass (Europe): www.climate-compass.net (en/de/es)

Covenant of Mayors (Europe): www.eumayors.eu (various)

energie:autark Kötschach-Mauthen (AT): www.energie-autark.at (de/en/it)

EnergieRegion Knonauer Amt (CH): www.energieregion-knonaueramt.ch (de)

Energieregion Bern-Solothurn (CH): www.energieregion-be-so.ch (de)

Energieregion Emmental (CH): www.oil-of-emmental.ch (de)

Energieregion Goms (CH): www.energieregiongoms.ch (de)

Energieregion Weiz-Gleisdorf (AT): www.energieregion.at (de)

Energie-Region, Région-Energie, Regione-Energia (CH): www.energie-region.ch (de), www.region-energie.ch (fr), www.regione-energia.ch (it)

Energiestadt, Cité de l'énergie, Città dell'energia (CH): www.energiestadt.ch (de), www.citedelenergie.ch (fr), www.cittadellenergia.ch (it)

Energietal Toggenburg (CH): www.energietal-toggenburg.ch (de)

Energievision Murau (AT): www.energievision.at (de)

Energiezukunft Vorarlberg (AT): www.energiezukunft-vorarlberg.at (de)

European Energy Award (Europe): www.european-energy-award.org (en)

e5 Programm für energieeffiziente Gemeinden (AT): www.e5-gemeinden.at (de)

Gemeinde-Energie (CH): www.gemeinde-energie.ch (de/fr/it)

klima:aktiv (AT): www.klimaaktiv.at/article/archive/28651 (Energieautarkie) (de)

Klimabündnis Österreich (AT): www.klimabuendnis.at (de)

Klima- und Energie-Modellregionen (AT): www.klimaundenergiemodellregionen.at (de)

Ökomodell Achantal e.V. (DE): www.achental.com (de)

Ökoregion Kaindorf (AT): www.oekoregion-kaindorf.at (de)

PCET Plan Climat-Energie Territorial (FR): www.pcet-ademe.fr (fr)

PubblichEnergie (IT): www.pubblichenergia.it/www/page/1 (it) (remark: renewables)

100% Erneuerbare-Energie-Regionen (DE): www.100-ee.de (de)