

Developing Regional Markets to Promote Global Sustainability: Workshop Report on Renewable Energy Projects in North Rhine-Westphalia

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Key words

renewable energy, energy supply, cooperation, developing and designing markets, project management, regional economy, regional sustainable development, North Rhine-Westphalia

Abstract

The workshop report describes four projects conducted in the German *Land* of North Rhine-Westphalia. The projects were aimed at promoting renewable energy sources and sustainable structural development in the region. Their approach was to support various actors in taking a systematic, coordinated, and cooperative influence on the development of relevant markets. State incentives provided a helpful basis. While the status and scope of projects varies, they have achieved significant successes. The experience gained in them suggests that a more dynamic, evolutionary, and integrative view of energy technology markets and energy-related services would benefit climate protection and regional value creation.

Non-sustainable structures as opportunities for regional development

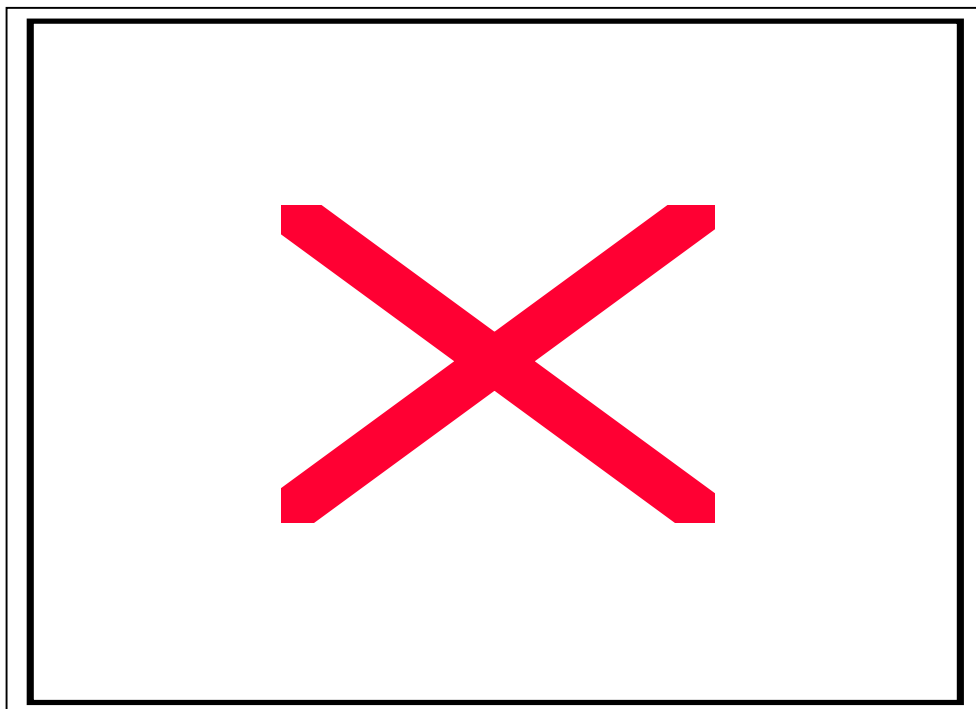


Figure 1: Many regions squander their energy surplus (based on Heck 2002)

The German regions spend vast sums for their supply of fossil fuels (Figure 1). In 2001 Germany imported crude oil, hard coal, and natural gas amounting to around €34 billion (Becker 2003). These raw materials are not renewable, and exploiting them increases the anthropogenic greenhouse effect.

The money spent for energy imports frequently ends up buttressing monopoly structures at the source, so that imbalance and non-sustainable developments persist in the countries of origin. Moreover, arbitrary pricing policies by energy-producing companies undermine the confidence of investors in importing countries.

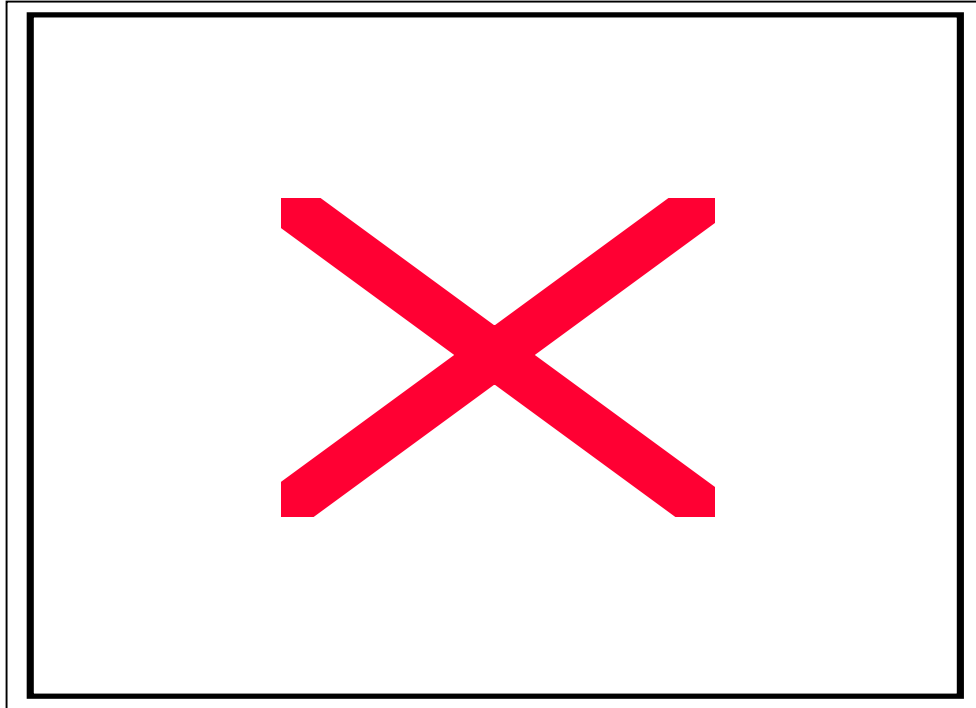


Figure 2: The vision for 2010: Sustainable development enables regions to develop their potential (based on Heck 2002)

The money that pays for imports is then lacking in the energy-consuming countries and their regions when it comes to developing, maintaining, and exploiting the regions' own capital, i.e. their natural and human resources, the technical infrastructure and built environment, etc. The business-as-usual scenario of non-sustainable development contains great risks.

Alternative options in a development more strongly oriented on sustainability, in contrast, enable energy-consuming countries to cultivate and develop regional potentials (Figure 2).

Participation as Involvement: Toward Sustainability and Quality of Life

Sustainability, the author believes, is best achieved through establishing a good balance between the interests of individuals, groups, and the short, mid, and long-term goals of society. The key is to discover shared concerns. Models like the sustainability triangle with the dimensions of ecology, economy, and social aspects (used for example as a basis in Diefenbacher 1997), or the sustainability tetrahedron, which adds an institutional dimension (Forum Umwelt und Entwicklung 1997), are useful as striking metaphors. The approach to (conflicting) interests to be discussed here, however, refers to other models of scientific, technical, and economic contexts, such as Busch-Lüty's hierarchical layers of spheres (1996) and the model of environmental consumption proposed by MISEREOR

and BUND (1996), which in turn is based on the material flow model set up by the Wuppertal Institute.

The challenge therefore is to

- use the existing resources with care, and apply management principles that orient consumption on the capacity for regeneration, in order to protect the long-term interests of society;
- protect the interests of people in other parts of the globe (securing a global level of quality of life across all social strata in the short term) and of future generations (securing quality of life in the long term); create equal opportunities especially through positive action in education. The overall goal here is to protect society's long, mid, and short-term interests;
- achieve a high quality of life and enable individuals to live a "good life" while stabilizing conditions for value creation, e.g. by securing companies' competitiveness, also as an incentive for more active commitment and innovation toward greater sustainability. The more short-term interests of individuals and groups are protected.

Protecting jobs and creating new possibilities for gainful employment in the context of renewable raw materials and (our focus here) renewable energy sources means securing the material basis for both quality of life and sustainable development. Most concepts of sustainability highlight participatory mechanisms as essential to quality of life (as seen from the individual's point of view). For individual human beings, participation means shaping their living environment according to their needs, to realize their potential and in doing so experience the feeling of empowerment that motivates further participation. Participation in this sense means involvement-having a voice in decisions on planning and development as well as contributing toward their implementation, e.g. by assuming responsibility and contributing resources.

Starting points for tackling current failures to promote sustainability exist not only at the supra-national and national, but also at the regional level. For the sake of simplicity the regional level is here defined not so much as a spatial unit than as an attitude or approach. Actor networks that focus around a specific base so as to solve the problems and develop the potentials of that base already constitute the core of a region. Administrative boundaries are a secondary consideration. What is significant are the actors' ties to the regional base and to other actors grouped around the same base: "Regional thinking makes a region." Establishing a sense of identity and a common cause are essential tools in the strategic creation of regions.

The cooperative promotion and development of regional markets for more sustainable products and services is only one example, and stands for a whole bundle of strategies in the context of a regional structural development that is oriented on the goal of sustainable development.

Regional Markets and Structural Development

The following chapter discusses sustainability deficits in regional development and the opportunities that lie in unexploited and undeveloped potentials (Kreft 2000a). As a point of departure let us take products and services intended to meet consumer needs. A general strategy must aim to decouple wealth as an aspect of quality of life from material and energy throughput, or more specifically, from the consumption of energy from non-renewable sources. Material and energy throughput on the current scale is no necessary condition for wealth. That is why communication in the framework of regional structural development projects must address the issue of wealth and quality of life. The value creation chain with its bearing on energy production, distribution, and supply must be restructured and expanded.

Supply and demand are important factors if changes in value creation chains are to be implemented. Current debates, however, all too often take an isolated and static view of the supply and demand sides of the market. A retrospective look at market development

shows that markets evolve in the push and pull of supply and demand. An actively comprehensive, more dynamic and integrative view of the two sides, in contrast, takes account of the communication between them and promises more immediate results. Liedtke and Rohn (2003) made a similar suggestion.

Products and services that are advantageous with regard to resource conservation show a marked tendency to be slow in penetrating markets. Obstacles frequently occur at the outset (on initial obstacles as a general problem see Ortmann 1997), with both sides barraging each other with buts and ifs. "We will only buy the product if the price is lower," the demand side says. The supply side launches a counter-attack and points to the difficulties that the demand-side stipulations would cause: "We will only manufacture and market the product if we can be sure that a sufficient number of consumers will buy it." Even to actors involved in the markets, it would seem, the supply and demand sides appear as isolated and static groupings that are almost impossible to influence.

To drive structural development in a given region, communication and cooperation between supply and demand, but also within supply and demand, need to be organized in a more stringent and targeted manner. It is the people who will have to take the initiative, and a wide range of terms has been devised to characterize the various roles and functions emerging in this context: promoters, carers, spearheads, developers, multipliers, and, as a special case, political entrepreneurs. All these will have an important role to play within and between the various groups. Market development vitally depends on the participation of regional actors, who can be motivated through highlighting the benefits and creating identity and meaning. These actors, in turn, can enlist and involve the rest of the local population. This was the basis for the project work described in the present article.

The projects described here seek to communicate innovative forms of organization, behaviours, strategies for shaping regional structures, and/or technologies through often traditional channels (i.e. farmers associations, local branches of trade associations and chambers of commerce, local heritage groups and community initiatives). The aim is to set up mechanisms and enduring structures in regional or local contexts that will inspire other regions to follow their example. Information on (positive) experiences, results, and findings, it has proved, activates people in other regions and thus provides a good basis for establishing structures that support sustainable regional development.

Aims of the Present Article

The present workshop report on completed and ongoing projects calls for a systemic and systematically active and cooperative development of markets at the regional level. In this context, it proposes a view on supply and demand that is integrative, dynamic, and evolutionary.

Potentials for communication and cooperation between the demand and supply sides will be identified and ways of developing them pointed out.

Some project results are as yet preliminary. Supplemented by results from completed projects they yield important findings for further practical development work in rural communities, towns, and regions, and for the related research.

The following challenges emerge in the area of energy supply:

Challenges in Sustainable Regional Energy Management

With regard to meeting energy needs, the main challenge is to supply sufficient amounts of renewable energy, where possible in the form desired by consumers. A point that is often overlooked is that the benefit for the consumer lies in the availability of power, heat/coolness, and light (as well as their specific qualities and distribution across the daily routine). Solutions range from the cultivation of energy crops in a new form of agriculture and their incineration or gasification in small, decentralized heating (power)

plants to the installation of solar systems on roofs to generate heat and power that is then marketed in the region.

The future system of energy generation and distribution will probably look something like this:

- Energy supply technologies will increasingly adapt to consumer needs (customized supply systems for private homes, mobile electrical appliances powered by built-in fuel cells or flexible solar cells).
- Energy from renewable sources is mostly generated, distributed, and used in dense networks of small units. Overall, the distance between suppliers and consumers will decrease if not disappear completely as consumers produce their own energy.
- The cash drain out of the regional economy is reduced.
- Instead, money from business and industry flows into maintaining and expanding the regional potentials of renewable energy sources.
- At the same time, the region augments its specific sustainability-related knowledge on energy management.
- The region maintains close relations of competition and cooperation with other, also more distant regions. Actors from different regions learn from each other through systematic exchange of experiences and adapt advantageous approaches without continually "reinventing the wheel."

A strategy for realizing such a scenario should include the following steps and take account of the following points:

- In an initial step, an encompassing analysis of the value creation chains involved in energy generation and distribution examines raw material supply chains as well as preliminary services and products, in particular for energy systems (wood pellet burners, photovoltaic modules) and building technologies (from insulating materials to fittings that save water and therefore energy). The focus is on services along energy-related value creation chains in their entirety: in the areas of planning (e.g. activities of urban planners and architects), building, renovation and installation (mainly activities in the construction industry), and design (e.g. interior design and especially illumination). Energy savings are highly important in obviating the use of fossil and nuclear energy sources and thus reducing microeconomic costs as well as emissions of greenhouse gases. The impetus this gives to the modernization of enterprises, industries, and regional economies in turn yields considerable competitive advantages.
- Regional enterprises use renewable energy sources, expand their business in the abovementioned fields, and add energy production or distribution activities with at least a mid-term perspective to their portfolios. Services further up or down the chain, such as energy management and energy consulting, open up new job opportunities. Qualification and training in ways of using energy are essential if new, more efficient, and sustainable technologies are to be implemented and disseminated. New companies are founded. Users in the region pay for energy from the region. The production industry, artisans, trade, and other regional service providers dispose of more money than previously, which can flow into the expansion, conservation, and maintenance of regional potentials. This opens up access to larger energy potentials, e.g. through the establishment of an affordable infrastructure linking areas of biomass cultivation with the many decentralized locations of future incineration and fermentation plants as well as real biomass refineries.
- The result is a stronger awareness of the potentials of renewable energy sources as part of the regional economy. Renewable energy is developed and expanded. The regional economy returns to a cautious exploitation of regional potentials, using a combination of decentralized high-tech facilities and simple manual work.
- Energy crops are an obvious choice for rural districts with uncultivated areas that can

be used for growing biomass as a raw material basis, but also for the installation of additional wind farms, water wheels and turbines. Solar thermal and photovoltaic devices find a place on barns and sheds (also of converted farms) and other (non-agricultural) buildings. Farms that have survived the past years of structural change increasingly turn to energy production ("energy farms").

- One of the most important steps toward the more intensive exploitation of endogenous potentials is an initial analysis of existing renewable energy sources and possibilities for saving energy, of the skills and knowledge of local and regional actors, and of the win-win potential inherent in possible collaborative efforts.
- Such analyses give impetus for ongoing projects as the results are fed into project groups and provide fruitful soil for further ideas that can be developed and elaborated in project proposals. The project groups use methods such as visualization to ensure efficient and effective communication.
- State funding is used where it is available. As state support may be expected to decrease in future, more effort is to flow into replacing it with innovative financing strategies such as sponsoring.
- "Every region is different:" Depending on the resources available in a region, on settlement structures, and actor constellations, some potentials are more readily accessible than others. The process of establishing such constellations holds economic opportunities that can be exploited in the short term. The challenge is to identify these opportunities and bring them to the attention of various target groups. Economic opportunities are important incentives in driving development toward the target constellations. Following the motto of picking the low-hanging fruit first, priority is given to projects that promise to yield short-term and material successes, including financial means that can then be re-invested into solutions to more complex problems.
- **What is essential for the implementation of these steps, however, are well-defined forms of organisation and working structures. These in turn can only be established if a small number of active citizens takes the initiative: They take the lead, assume responsibility, bring together actors from different target groups in the regional markets, forming perhaps an initial working group; they identify tasks, coordinate their execution, seek the necessary resources, control whether tasks have been fulfilled and deal with tardiness or failure in providing results, verify achievements-often from a position in the background. With their personal commitment they pursue the development of regional markets as a type of project, and therefore use the methods of project management.**

Changing energy management requires an explicit change management strategy for the energy sector, including the development of the necessary technologies, organizational structures (in particular in companies), and skills. The key word **BASECS** neatly summarizes this concept of development and change in energy management:

- Highlight the **b**enefits of change as represented in the following points
- Raise **a**wareness for these benefits in broad sections of the regional population
- **S**ave energy through changed behaviours
- Use **e**fficiency technologies
- **C**oordinate the many, also smaller energy production units with consuming units (households, companies) to improve load management with the help of modern communication and energy storage technologies
- **S**ubstitute fossil and nuclear energy sources with renewables from the region

The projects outlined here each apply or applied a choice from the wide range of possible

approaches, methods, and instruments, and serve to illustrate the strategy.

The Projects

Four different projects will be described below. Brief outlines include the following points:

- They name the communities in which the projects are based, allowing a clear localization within North Rhine-Westphalia.
- They give population figures that allow assessing the magnitude of the challenge and, on this basis, the significance of the achievements made.
- They define targets and time frames that give an idea of the scope of the project. The status at the time this report was completed in December 2003 is identified.
- They identify sources of funding to shed light on the significance that political and/or administrative bodies accord the project in question.

The following categories serve to clarify the internal organisation of the projects:

- The course of a project and the methods applied in it are outlined to give an idea of its specific activities.
- The steering groups include social groups and institutions (also functioning as multipliers within their respective groups) that are named to document how broadly-based support is in each case. Their respective tasks are outlined.
- The leaders and promoters responsible for the outlined projects are identified so as to facilitate an assessment of the durability of activities.
- There is a close link between the tasks of the steering group, the goals, and the target groups of a given project.
- As the BzR plays different roles in different projects, its function is specified in each case to enhance transparency.
- Project results are distinguished into different categories, depending on whether they represent immediate *results* or more general *findings*, e.g. on approaches to regional management. It has to be kept in mind, however, that the results and findings of ongoing projects are preliminary.
- Two figures illustrate the structural organisation of projects (Figures 3 and 4).

Table 1: Overview of projects and initiatives

Project	Regional base	Objectives	Time frame/ status	Funding
Regional initiative <i>Model Region Märkische District</i> , focus energy	Märkische district, approx. 460,000 inhabitants	Targeted individual projects trigger sustainable regional development in the Märkische district	XI/1997 – XII/2000 Completed, work continued in the project <i>Bio-energy Village Mellen</i> and the forestry campaign addressing the development of regional markets for timber and firewood	- NRW Economics Ministry and Environment Ministry - Märkische district authorities - Energy supply companies
Project <i>Bio-energy Village Mellen</i>	Mellen village, 626 inhabitants, (municipality of Balve, Märkische district)	Give impetus to the development of projects for the dissemination of renewable energy sources in the village of Mellen	IV/2001 – III/2003 Project completed, work continued in local groups, feasibility study for a wood-fired heating plant completed, implementation possible	- NRW Labour Ministry
Local initiative and project <i>Climate Village Dingden</i> ¹	Dingden village, 6,781 inhabitants (municipality of Hamminkeln, Wesel district)	Dingden as a reference location for sustainable economic activity and model case for changeover to CO ₂ -neutral energy production; specific projects, partnership with a Dutch village, analysis of potentials, realization of potentials on the basis of business plans	Preliminary phase since 2002; planned time frame up to 2006 Working group established, joint analysis begun, assembly of starting points and resources, assessment of ongoing projects; publicity	- Limited initial funding from ongoing Euregio collaboration project; - Application for follow-up project planned for submission with Euregio (Interreg grants); - Acquisition of further funding in progress
Event <i>New Energy for the Region?</i>	Region in the support programme <i>Active Region: Eastern Ruhr Region</i> (municipalities of Dortmund and Hamm, Unna district)	Exchange information and experiences, increase citizen awareness: Raise interest for specific uses such as biogas plants, pellet heating plants, solar thermal and photovoltaic devices, trigger a regional initiative	in XII-2003 Post-event assessment	- Management of the initiative <i>Active Region: Eastern Ruhr Region</i> ; funds from the German government's support programme <i>Active Region</i>

¹See www.klimadorf-dingden.de and, from February 2004, also www.klimadorf.de

Table 1 (continued)

Project	Activities and methods	Social groups represented in the steering group	Tasks of the steering group	Leaders/ promoters
Regional initiative <i>Model Region Märkische District</i> , focus energy	<ul style="list-style-type: none"> - Regular meetings about every two months - Information events - Studies on potential of small hydroelectric plants 	Working group energy <ul style="list-style-type: none"> - Energy supply - Environmental protection - Vocational college - Administration - Church (Iserlohn Protestant Academy) - Scientific support Superordinate level <ul style="list-style-type: none"> - Steering group for the entire initiative 	<ul style="list-style-type: none"> - Defining objectives, informing and convincing working group members of the goals and specific methods of sustainable regional development 	Leadership <ul style="list-style-type: none"> - District administration Promoters <ul style="list-style-type: none"> - Protestant Academy - Head of the planning department in the district administration (later also secretary of NETZ e.V.) - Scientific support (BzR)
Project <i>Bio-energy Village Mellen</i>	<ul style="list-style-type: none"> - Two information events on costs and benefits of small wood-fired heating plants - Field trips - Opinion poll on acceptance of wood-fired heating plant 	Working group of villagers, many of whom work in forestry	<ul style="list-style-type: none"> - Clarify project objectives and factual issues - Coordinate activities - Enlist further villagers - At the initial stage, win support from local authorities 	Leadership <ul style="list-style-type: none"> - Protestant Academy Promoters <ul style="list-style-type: none"> - BzR - Former head of local authority and her spouse - Head of local authority
Local initiative and project <i>Climate Village Dingden</i>	<ul style="list-style-type: none"> - Organisation of a multi-project initiative - Combination of methods mentioned in other examples: projects, events, field trips, etc. 	See Figures 3 and 4: Working group <ul style="list-style-type: none"> - BzR - Local Agenda 21 (LA 21) representative of the municipality of Hamminkeln - Villagers (including an architect) - Active citizens of Hamminkeln 	<ul style="list-style-type: none"> - Clarify goals and factual issues - Coordinate activities - Enlist further villagers - Win additional support from local authorities 	Leadership <ul style="list-style-type: none"> - BzR; an association is to be established to assume leadership Promoters <ul style="list-style-type: none"> - LA21 representative of the municipality of Hamminkeln - Members of the "Dingden circle" - Increasing number of inhabitants
Event <i>New Energy for the Region?</i>	<ul style="list-style-type: none"> - Initial event - Preparatory talks with actors in the conception phase - Follow-up studies planned 	Working group <ul style="list-style-type: none"> - Representatives of the Protestant Academy - <i>Active Region</i> manager - BzR Working group of interested citizens from the region	For the event <ul style="list-style-type: none"> - SWOT² - Disseminate information - Develop steps toward further management of offers - Plan further steps 	Leadership for the event <ul style="list-style-type: none"> - Protestant Academy Promoters <ul style="list-style-type: none"> - BzR In the communities <ul style="list-style-type: none"> - Farmers - Heads of local authorities - Others (e.g. miners in early retirement)

² SWOT = Analysis of strengths, weaknesses, opportunities, threats

Table 1 (continued)

Project	Target groups	Role of the BzR	(Preliminary) findings	(Preliminary) results
Regional initiative <i>Model Region Märkische District</i> , focus energy	<ul style="list-style-type: none"> - Members of the working group itself - Originally, inhabitants of the district - Further actors in the Märkische district 	<ul style="list-style-type: none"> - Scientific support through formative evaluation - Consultancy for the steering group in the district administration - Impulses through own events - Development of sustainability indicators 	<ul style="list-style-type: none"> - Access to inhabitants of the district difficult, target group limited to some few actors - Communication skills have a major impact on the quality of the process - Actors need training in communication skills 	<ul style="list-style-type: none"> - Transformation of the working group into an association (NETZ e.V.) - Stronger awareness of endogenous resources and promotion of communication - Stronger awareness of possible synergies, e.g. between environmental protection and value creation in enterprises
Project <i>Bio-energy Village Mellen</i>	<ul style="list-style-type: none"> - Villagers (later focus on forest farmers) - Initial efforts to involve municipal politicians from Balve were abandoned due to their lack of interest. 	<ul style="list-style-type: none"> - Support during the conception phase - Networking - General contact and consultant - Mediation 	<ul style="list-style-type: none"> - Strong commitment - Top-down approach to trigger bottom-up activities proves successful 	<ul style="list-style-type: none"> - A group of local leaders is prepared to have the feasibility of the heating plant tested despite difficult framework conditions (absence of major heating power consumer)
Local initiative and project <i>Climate Village Dingden</i>	<ul style="list-style-type: none"> - Villagers - Later further regional actors from different target groups: artisans, farmers, entrepreneurs, administration 	<ul style="list-style-type: none"> - Take up and transfer the Zero Emission Village (ZEV) idea (Heck 2002), modify the conception - Networking - Project leadership 	<ul style="list-style-type: none"> - Strong commitment - If the conditions are positive, even lofty visions can find approval 	<ul style="list-style-type: none"> - Willingness of a group of local leaders to support the realization of the concept; - An association is being established - An exhibition room and advice centre are being established - Identification of potentials, projects and professional communication in planning
Event <i>New Energy for the Region?</i>	<ul style="list-style-type: none"> - Farmers - Homeowners - Other interested inhabitants and citizens involved in <i>Active Region</i> - Municipal utilities 	<ul style="list-style-type: none"> - Collaboration on the conference programme and coordination - Mediation and support in the development of objectives and measures 	<ul style="list-style-type: none"> - Various actors in the region under consideration also promote the subject 	<ul style="list-style-type: none"> - Preliminary talks caused a number of actors to stop and reconsider their position; in some cases a need for reassurance emerged

Let us now take a closer look at one example, the organisation of the local initiative and project *Climate Village Dingden*. The figures illustrate the status quo and the target status in about three years. The energy market with supply and demand is represented as the focus of efforts. Renewable energy is set off against fossil and nuclear energy.

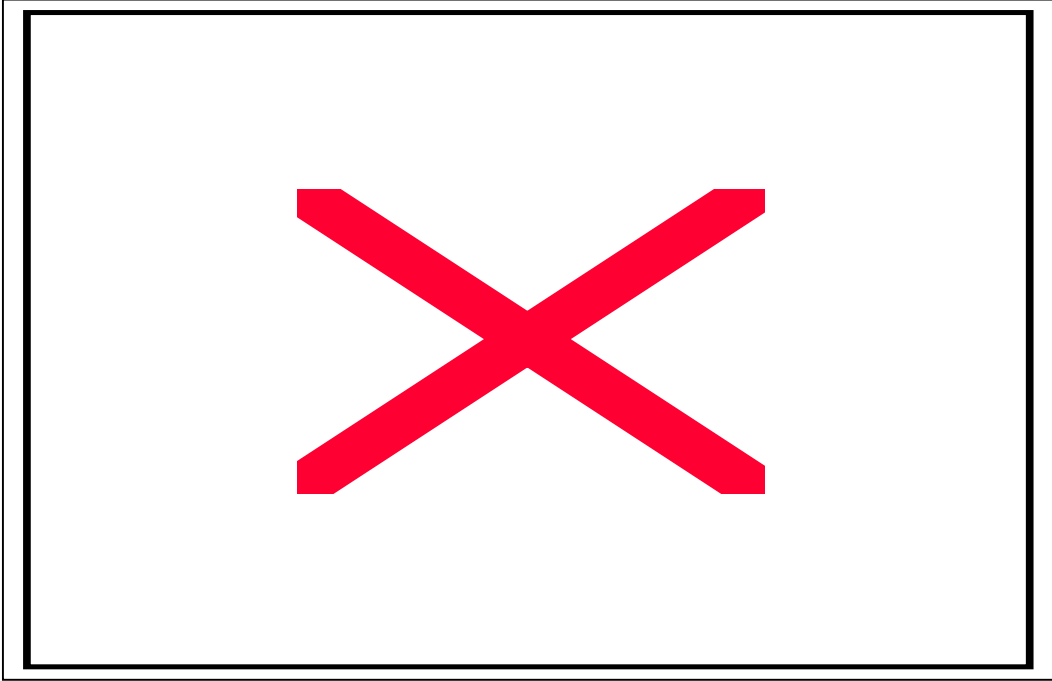


Figure 3: Organisation of the project *Climate Village Dingden* today. A more detailed representation of the situation in the Dutch village is beyond the scope of this figure, which however shows that it largely reflects the German situation (s – fossil and nuclear energy supply, d – fossil and nuclear energy demand; S – renewable energy supply; D – renewable energy demand)

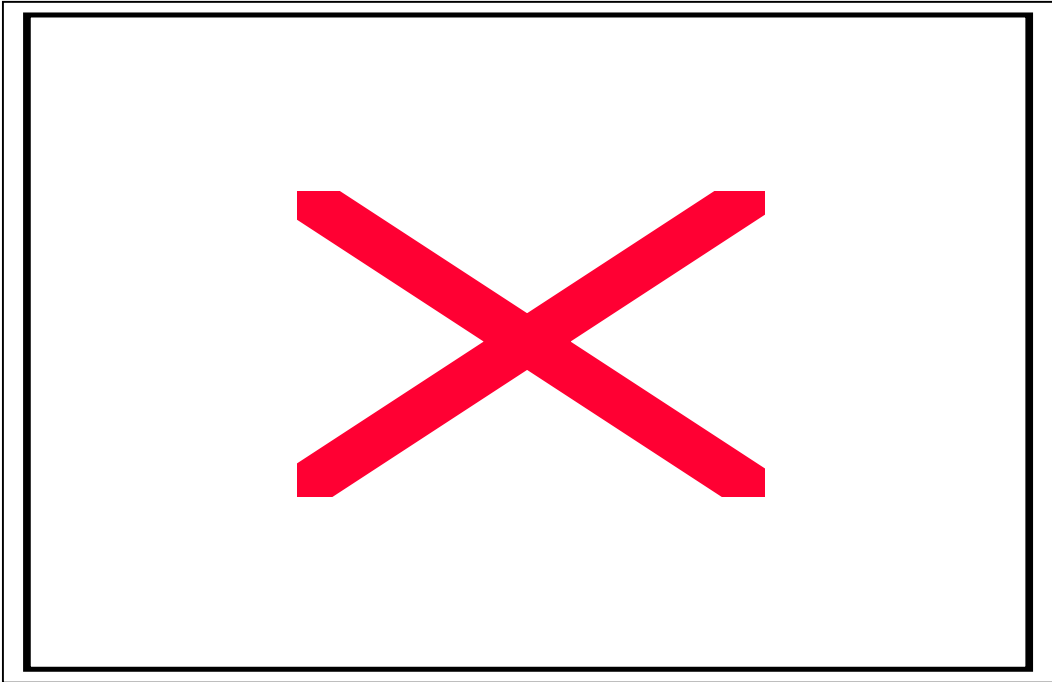


Figure 4: Organisation of the project *Climate Village Dingden* in about three years (S – renewable energy supply; D – renewable energy demand; marked decline in supply and demand for fossil and nuclear energy)

Experiences, Results, and Findings

- The German state subsidizes renewable energies and to a degree also supports energy-saving measures. At the national level we find legislation on feeding energy into the grid, plus various support programmes, initiatives, and institutions of the *Land* North Rhine-Westphalia (i.e. REN energy efficiency programme and *100,000 Roofs* solar power programme, initiative on energies of the future, Energy Agency). Information campaigns and support programmes target the community level. These activities have been decisive in pushing markets to develop as they have done, and with the results today in evidence. State funding is vital for a number of projects.
- Experience shows that some actors feel a strong commitment even if no immediate economic advantages beckon. In many cases, however, the issues mentioned fail to find promoters, spearheads, and carers to tap state incentives and put good ideas into practice. The activities of such promoters, however, are crucial if developments are to be pushed off and kept afloat even against adverse currents and until they are able to steer a steady course on their own. Once appropriate incentives have given the necessary starting power, the widening circle of supporters is well able to keep developments moving. It is then possible to establish structures that work routinely, needing fewer impulses from individuals or small groups.
- With appropriate project organisation, even a first meeting can bring together people who want to know ("When will a photovoltaic system on my roof at home begin to pay for itself?") with people who know ("I'm familiar with the problem. Let's go and have a closer look."). Classic cases of the need for knowledge management recur in these situations. Some who now start discussing a problem may even have known each other before, as was the case in the initial event for the project *Climate Village Dingden*.
- Public funding and support programmes have done much to increase the acceptance of renewable energy sources among various groups at the local and regional levels. In particular, local decision-makers show a growing willingness to take up related issues. The project *Model Region Märkische District*, however, points to the difficulties (still) faced by initiatives for renewable raw materials if they do not originate within local majorities, or are supported by them. The renewable energy source in this case was locally-grown timber. The Märkische region has a distinctive profile: medium-sized companies in the metalworking, synthetics and electrical industry characterize the economy (Kreft 2000a). Attempts at (re)establishing renewable raw materials and energy sources, at restructuring value creation chains along these lines, have to struggle against the regional actors' ossified patterns of self-perception, fixed habits of thought and behaviour, and refusal to believe in or support change. Further obstacles range from inflexible budget restrictions in business development funds to personal fears of loss. All these are typical challenges in regional change management (Kreft 2002). Under such circumstances it is difficult even to win actors willing to investigate the chances and risks of alternative options, or look at cost-benefit analyses from projects in other regions.

Critical Assessment of the Projects and Their Results

Further work along the lines suggested here will show which other problems may arise or have so far gone unnoticed. Is an optimistic view of the possibilities of influencing regional economies through regional actors at all justified under the given circumstances and with the resources available? The challenges are immensely complex, and possible obstacles numerous.

Change in organisations and in regions not only has benefits, or at least that is the impression if you look at earlier proposals for restructuring processes. The losers in the change toward the abovementioned goals will necessarily be those producers and service-providers on the supply side who continue to bank on a throughput of vast amounts of fossil and nuclear fuels and an inefficient use of energy, who promote its

production and consumption. The goal, after all, is gradually to let these markets dry up and thus benefit competing markets. Targeted management concepts and strategies for implementing change will assist efforts to make losers winners, and persuade even those companies that persist in a less sustainable direction to reorient their operations.

Summary and Outlook: Is It Possible to Design and Shape Markets?

The projects described here had or have different dimensions (population figures, area, size and structure of actor groups) and varying scope. They are therefore characterized by varying degrees of complexity. What they all share is a general orientation on the BASECS concept, which in its current stringency however only emerged over time. The concept evolved and grew as project leaders, organizers, and promoters learned and gained experience. All projects can record a degree of success in reaching their goals.

It is possible to influence the interplay of supply and demand. With a view to furthering the goal of sustainable regional development, the present report aims to motivate regional actors to adopt a more integrative, dynamic, and evolutionary understanding of regional markets and their framework conditions. The goal is the joint and systematic development of regional markets for products and services that with regard to sustainability outperform comparable products and services or their precursors. That is a difficult challenge, but it can be met. Individual companies and industries are often highly successful in influencing and developing their markets. They seek to win potential customers as permanent customers. So why should it not be possible, in the framework of regional networks, and on the basis of jointly developed goals, to bring producers and consumers together in a framework that allows influencing or even generating supply and demand along sustainable lines? Let me suggest that one important step toward sustainable development lies in actively promoting collaboration between regional actors from the consumer and the producer sides, and in using existing cooperative structures to push markets toward sustainability. This approach also gives local and regional agendas a decisive orientation, for in many cases, they lack clear and appropriate tasks so that all too often, well-meant initiatives come to nothing. A small number of agenda initiatives, e.g. in the district of Steinfurt (North Rhine-Westphalia), have seized this opportunity (Nickel 2004).

Effective and efficient communication is vital for identifying the shared concerns of actors, for building trust between them, and for rousing them to commitment and responsibility. The projects outlined here illustrate some approaches. It becomes clear that by taking a proactive stance, individuals can achieve a significant positive impact on sustainable development in their region. As local or regional promoters, carers, etc., they develop considerable innovative thrust.

A cooperative development of regional markets in the framework of sustainable regional development pursues a bundle of targets and tasks on a complex basis of motivations, and uses methods and tools from a wide range of disciplines. In order to make these multi-faceted issues accessible to laypeople without oversimplifying the matter, promoters need a suitable didactic approach. Evolutionary economics provides helpful models of economy and the society on which the concepts of change management also draw. Communication will have to be adapted to the various target groups associated with regional markets.

In this context the issue of a systematic approach to existing, endogenous knowledge, in short, knowledge management, also arises as a major challenge for regional management. Paraphrasing what Siemens CEO Heinrich von Pierer said about his company, we could exclaim:

If the village only knew what the village knows!

To use some contemporary catchphrases, just-on-time delivery of knowledge-on-demand at the place where it is needed will increasingly gain importance. Uncovering the hidden knowledge that exists within a given group, and pooling the knowledge scattered in a region, is a vital task if the development of villages, municipalities, and regions, and of

regional markets in particular, is to prosper. Knowledge management for example can serve to strengthen existing value creation chains by showing actors which products and services can (still or again) be provided in the region. The term "cluster management" belongs in this context. Like other regional industries, the energy industry can be optimized as a whole. The task of cluster management, then, is to organize the exchange of information and more generally promote communication and cooperation. In addition, it also makes sense to organize further training and qualification and intensify the promotion of exports. An obvious move is to support or even take over those operations that lie outside the core business of the enterprises in question, so far as they can be persuaded to embrace this kind of outsourcing. The entire circle of service providers that do not belong to the industry in the stricter sense (e.g. financial institutions and consultants) must be involved at least part of the time.

Further questions that emerge in the context of the development of regional markets for more sustainable products and services are:

- How do these developments evolve in the long run? Which controlling and steering mechanisms can be applied?
- What kind of outside intervention should be allowed to influence the direction that markets are taking, apart from laws and regulations? In which cases does it suffice for actors to work in partnership to yield good results in the sense of increased sustainability? Where does it need more competition to push regional markets toward tangible results? How can such a cooperative organization of markets take place without hampering the necessary competition in these markets?
- What is the "right" size for a region in the perspective of development toward more sustainable products and services? How can regional actors who want to develop their markets on a cooperative basis lastingly define the region?
- Which possibilities of transfer to other regions exist? In how far is it possible to apply the concept in purely urban contexts?
- How much knowledge on this evolutionary, systematic, and cooperative approach do regional bodies of business promotion already have?
- Which different "development aid" roles (promoters etc.) are necessary for efficient operations?

One thing is clear-we need more empirical data. A close analysis of a larger number of projects should take models from evolutionary economics as a basis and investigate output figures for turnover and profits as well as impacts on the job situation and the natural environment. Appropriate theoretical models allow identifying the influence that specific individual project activities and their input have on these figures.

That would enable us to find more precise answers to the following questions: How well can markets be steered toward sustainable development? How does business promotion contribute toward achieving this ambitious goal if all aspects mentioned above are taken into account?

***Is it possible to design regional markets in a joint and targeted effort
to promote sustainable development?***

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