

# Case Study 11

## Contracting Rommerskirchen

### Germany



[www.energychange.info](http://www.energychange.info)



Project co-funded by the European Commission within  
**THE SEVENTH FRAMEWORK PROGRAMME**  
**THEME ENERGY.2007.9.1.2**  
Energy behavioral changes



# Changing Behaviour



Work package 2

Development of the conceptual model: Analysis of success factors, underlying models and methods in target group interaction

## Case Study 11:

### Contracting Rommerskirchen, Germany

Petra Maier (VZ NRW)

March, 2009

Grant agreement no: 213217

Project acronym: CHANGING BEHAVIOUR

Project full title: *Contextualising behavioural change in energy programmes involving intermediaries and policymaking organizations working towards changing behaviour*

[www.energychange.info](http://www.energychange.info)

## Content

Summary of the case .....	5
Step 1: Context of DSM programme .....	6
<i>National context in general</i> .....	6
<i>Local context</i> .....	7
Step 2: focus of DSM programme (1A4).....	9
<i>General issues</i> .....	9
<i>Initiator and partners</i> .....	9
<i>Problem definition</i> .....	9
<i>Goals and objectives</i> .....	9
<i>The targets and target group</i> .....	9
Step 3: design of programme .....	11
<i>What knowledge and ideas informed the design of the programme?</i> .....	11
<i>Research conducted on target group</i> .....	11
<i>The intervention methods/instruments and activities used</i> .....	11
<i>Communication</i> .....	12
<i>Learning, evaluation and monitoring</i> .....	12
<i>To evaluate and monitor the process, the consumption of gas and electricity is quantified. Each year the annual energy savings are reported to the municipality.</i> .....	12
<i>Link to other programmes and policy</i> .....	12
Step 4: process of programme.....	13
<i>Interaction between the different participants</i> .....	13
<i>Reaction of the project manager to issues/problems</i> .....	13
Step 5: outcome of process .....	14
<i>Objectives/goals/outcomes</i> .....	14
<i>Effectiveness</i> .....	14
<i>Social learning</i> .....	14
<i>Follow-up of the programme</i> .....	14
Step 6: analysis and conclusion .....	15

## **Summary of the case**

The energy consumption in the buildings of the municipality of Rommerskirchen was constantly rising. First attempts to regulate the controllers of the system did not succeed. The consultancy of the EnergyAgency.NRW brought up the idea of performance contracting. The real estate of the municipality is quite diverse, like schools, fire brigade buildings, public swimming pool, multifunctional event hall, gyms, etc. Consulting engineers have been mandated to plan efficient measures and then call for tenders. This has been successful. In 2003 a company was chosen and contracted. Energy savings of 24 percent have been guaranteed. In the first year, savings of approximately 26 percent have been realised.

## Step 1: Context of DSM programme

### *National context in general*

Germany is one out of the few EU Member States that will most probably reach its 2008/2012 Kyoto GHG reduction target (reduction target of 21% compared to base year 1990) and has also been a climate policy pioneer back in the 1990s, at least in terms of the political debate and the setting of reduction targets. Two out of three Germans believe that Germany should take a leading role in the international efforts to mitigate climate change. Of all Germans, 96% agree that consumer behaviour is an important driver for energy savings and 98% support the idea that the industry should be forced to offer more energy saving products. A share of 84% claim that they pay attention to low energy consumption when buying household appliances (BMU 2006).

The energy consumption per household in Germany (adjusted to the EU-27 average climate) is comparable to the EU-27 average. Whereas the energy consumption per capita is above the EU-27 average, the specific energy intensity (energy consumption per GDP) is below this average (BMWI 2008, Odyssee 2008).

In Germany an average household consumes about 3.620 kWh electricity per year, whereas the EU-27 average is 4.110 kWh. However, electricity consumption of private households is increasing to a larger extent than the overall electricity consumption of the country. Whereas the latter has increased by approximately 0.4 % per year between the years 2000 and 2006 (EU-27: 2.4 % per year), the annual increasing rate of the electricity consumption in the household sector was in the range of 1 %. This rise clearly implies that efficiency gains through technology development are overcompensated by augmenting equipment rates (e.g. tumble driers) and the trend towards larger appliances (e.g. larger TVs, refrigerators).

In recent years energy efficiency is gaining more and more attention in the political debate. As compared to the discussion on the support of renewable energy (especially wind energy), there seems to be a consensus across all political parties on the issue of energy efficiency.

Other policies in Germany comprise energy taxes (e.g. posed on electricity, natural gas and liquid fossil fuels consumption), various energy labelling activities (including those following the Energy Labelling Directive 92/75/EEC, governmental activities such as the 'Blauer Engel' – Blue Angel ecolabel as well as private initiatives) and financial support schemes. However, the debate on energy efficiency is rather technology orientated (e.g. efficiency standards, development of new technologies). Sufficiency aspects including questions about our lifestyle or our mobility behaviour are more or less left out of the discussion.

The liberalisation of the German electricity market started in 1998. Before the German electricity market was opened for competition several utilities operated efficiency programmes such as bonus schemes for A-rated appliances or energy consultancy. However, many of these programmes have not been continued after liberalisation.

As a result of this decentralised infrastructure, it has become possible to test different instruments and approaches on a local and regional level, for example before they can gain a political majority on a national level.

The energy prices have increased substantially (despite an early opening of the electricity market in 1998) in recent years. Currently, the prices have reached a level at which a certain amount of

households are not able to pay electricity and gas bills, making energy poverty an issue on the political agenda.

The communities are the biggest public proprietors of real estate in Germany. They own about 40.000 school buildings, 50.000 nursery schools, about 15.000 office buildings and many different other public buildings. The potential of energy savings is estimated to be more than 40%.

### *Local context*

The municipality of Rommerskirchen is a relatively small community, with about 12.700 inhabitants. Their administration consists of about 60 persons. They had employed one very committed energy commissioner. All the people of the local council – except the mayor – work on a voluntary basis. The main interest of the municipality was to reduce their expenditures on energy, which have been rising more than expected. With their own ideas and possibilities, which they tested, they have not been successful.

For a municipality of this size it seems quite progressive to have an employee responsible for energy matters. It also was a very committed person, so the municipality already had some experience with smaller projects.

The starting point for the discussion on contracting was an offer of one of the big German energy suppliers for another system of contracting. This energy supplier is a very important employer in the area.

The EnergyAgency.NRW was invited to introduce possibilities for the reduction of energy costs. They favoured performance contracting and convinced all the stakeholders, except the mayor.

The EnergyAgency.NRW is a service agency of the state to support communities and enterprises in CO2 reduction and energy efficiency.

All the participants of the project have more or less actively been involved in the project and most of them could serve their own interests with it. The administration had the need to reduce expenditures, the council is responsible for the decision and the budget of the municipality in general. The members of the council of all parties supported the idea. The EnergyAgency.NRW was involved as expert and consultant to accompany the project. Afterwards a consulting engineer was elected to make a first suggestion as the basis for a call for tender. The users of the buildings have just been involved at the stage of the realization. On the community level, it was discussed whether to participate in another project of the regional government called “Communal Label“. In the end, it was not realised because of lacking capacities.

### *Specific context of the project*

The energy commissioner of the municipality was very engaged to reduce the energy consumption. The energy agency was supportive in convincing the local council and in the implementation. The energy supplier of the municipality was the first to suggest contracting. Even though their idea did not find the support of the council, they did not hinder the project.

*What is the historical experience with similar projects?*

The EnergyAgency.NRW is active in consultancy and support to this kind of projects since 1990. The agency is financed by the regional government. The advice is free of costs for the municipality.

All the technology applied was already on the market and implemented in other projects. A supportive element for the project was the availability of comparable successful projects. The initiators of this project could refer to many experiences made before. Their partner, the EnergyAgency.NRW, itself had the knowledge of many implemented projects.



## Step 2: Focus of DSM programme (1A4)

### *General issues*

The programme started in 2000. In 2001 the administration was informed and an inventory was made. In April 2002 the local council decided to implement the project and how to do it. They started to look for a consulting engineer and commissioned one at end of September 2002. The contract for the energy saving has been concluded for a period of ten years starting 01.01.2004. This contract regulated also the time schedule. The consulting engineer received a fee of 43.000 € The investment of the performance contractor was about 220.000,00 € The new and ambitious part of the project is that all buildings of the municipality have been included.

### *Initiator and partners*

A large part of the initiative was taken by the energy commissioner of the municipality. He was very active in this field and had a good reputation within the local administration and the local council. So he was able to motivate the key players. By involving the EnergyAgency.NRW he found a strong and supportive partner who is considered very competent experienced in the field of performance contracting. The involvement of the consulting engineer was important for the municipality. With the call for tender they got a transparent and comparable basis for their decision. The municipality financed the fee for the consulting engineer. The investments for the energy saving was financed by the performance contractor.

### *Problem definition*

What is the problem or issue that needs to be solved and that the intervention targets? The problem was a very basic one: the energy consumption and the energy prices are rising constantly. This was a growing problem for the budget of the local government. Very diverse buildings and technical equipment had to be considered. The municipality's attempts to do it on their own have not been successful.

### *Goals and objectives*

In the beginning the goals were very general, like "saving energy and saving costs". In the process of the project an inventory was made. This showed effective measures and gave a concrete assumption of the potential of energy savings. In the call for tender and especially in the contract with the performance contractor the goals have been formulated as clearly as possible. This also serves to avoid conflicts during the performance.

### *The targets and target group*

The main target group has been the local council. They had to take the decision to implement a performance contracting in their community. It consisted of 32 members in total, five women and 27 men. They belong to different parties:

- CDU 14 (Christian democratic union)
- SPD 10 (social democratic party)
- UWG 4 (independent voters community)
- FDP 1 (liberal party)

- Bündnis 90/Grüne 1 (green party)
- Freie Bürger Rommerskirchen 2 (free citizens of Rommerskirchen)

They all, except the mayor, work on a voluntary basis. The decision to start the performance contracting was taken by common consent. The project aims at all the buildings belonging to the municipality.

The administration of the municipality consists of about 60 persons, working in very different and manifold areas of responsibility. The municipality of Rommerskirchen is situated between the regional capital Düsseldorf and Cologne. It is split in 17 localities, with 12.500 inhabitants. It seemed to facilitate the project, that it is a relatively small municipality and that no jobs have been endangered. Some of the technical measures have been realised by local craftsmen.

The change aimed at the technical equipment. One part of the financial savings of the municipality has been to pare down the facility managers. For most of the users, no behavioural change was necessary. The measures have been:

- Introduction of an energy management system,
- Installing a super-ordinated central building control system
- Replacement and optimization of heating pumps
- Optimization of existing ventilation
- Replacement and/or sanitation of heating
- Introduction of a continuous energy management system.

## Step 3: Design of programme

### *What knowledge and ideas informed the design of the programme?*

I assume that the idea and background of performance contracting is known. In this case the guidelines of the German energy agency and of Hessian ministry of the environment have been considered. The EnergyAgency.NRW has a lot of experience with this kind of project. In preparation of this project an exchange between another comparable municipality which also started performance contracting, took place. In this case a call for tender was made, which described carefully the single measures to take. This aimed at avoiding cherry-picking by the contractors. At the same time the offers of 14 suppliers could be compared. Seven of them were considered reasonable. In Germany there are about 500 enterprises that offer contracting, just about ten offer performance contracting.

### *Research conducted on target group*

The starting point of the project lay in the needs of the municipality. So there was no research on the target group. The first input came from the local energy supplier, who tried to acquire for contracting. After that the energy commissioner involved the EnergyAgency.NRW, experience and expertise was gained from previous projects.

Have unintended and possibly negative consequences of the programme been thought of prior to the implementation? Possible consequences have been discussed by the local council and the energy agency. The result was that they choose performance contracting and took the decision to make a call for tender.

### **What barriers, motives and capacities did the programme aim to target?**

The programme aimed at outplating the financial efforts for reinvestments. It was checked, if it would be cheaper and easier to do all the technical changes themselves and get them financed by a bank. But this was opted out, because the performance contractor was able to do this more efficiently.

Beyond the energy savings the municipality is getting new equipment, which remains there, after the end of the contract. Depending on the state of the technique then and technical innovations until then, they extend their own period of reinvesting.

### *The intervention methods/instruments and activities used*

Incentives might have existed in form of subsidies. If they have been used, this has been done by the contractor, as he was investing. The channels of supply for the technology have to be secured by the contractor.

In the contract between the municipality and the contractor, an energy cost baseline and guaranteed savings of 24 % have been fixed. The reward for the municipality in this sense is that they have to pay less energy costs for all their buildings. This is noted regularly in the budget of the municipality. After the first year they already reached savings of 26 %.

In the first step of convincing the local council, many personal talks took place. In addition to that, the energy commissioner had the confidence of the council.

The administration of the municipality, especially the energy commissioner, took the initiative into the local council and he also was the one who involved the EnergyAgency.NRW for consultation. The local council was the one who had to decide. This took the discussion in the local associations of the parties. The users of the buildings have been involved at a very late stage of the progress. They have been informed before the construction in their buildings started. The facility managers of the schools, the fire brigade and of the swimming pool have been instructed in the use of the new technology. A remote control system – installed and operated by the contractor – made life easier for them.

The social environment has not been involved. The whole project focused on technical changes.

### *Communication*

Until the realization of the project communication was mainly addressed towards the local council, administration and the political parties. The most convincing way of communication was a live presentation for the local council. They considered other successful examples and the support of the regional government.

The local newspaper reported on the project.

In the municipality a working group on energy subjects is interested now in publishing the results of the project. The EnergyAgency.NRW produced and printed a brochure, which is also available online: [http://www.ea-nrw.de/database/data/datainfopool/contracting\\_rommerskirchen.pdf](http://www.ea-nrw.de/database/data/datainfopool/contracting_rommerskirchen.pdf) All the information given about costs, payback time, the service and the technology to be used was discussed between the participating parties.

### *Learning, evaluation and monitoring*

To evaluate and monitor the process, the consumption of gas and electricity is quantified. Each year the annual energy savings are reported to the municipality.

To respond on changing conditions in the energy sector the contract foresees an adjustment of changing prices. Also the possibility of changing the use of the building is considered. The first two years are considered as learning phase, how to communicate about changing prices, change of use. The EnergyAgency.NRW is moderating this process. The European public procurement law can be an inhibitory factor, as not necessarily experiences exist with the contractor.

### *Link to other programmes and policy*

It was very helpful, that there could be direct contact to municipalities with a similar structure, like Wülfrath. They had also successfully implemented performance contracting.

## Step 4: Process of programme

### *Interaction between the different participants*

All involved and relevant parties had more or less the same interest and responsibility for solving the problem of rising energy costs. The main factors convincing all parties might have been:

- A very committed energy commissioner who took initiative.
- The involvement of a consultant (EnergyAgency.NRW), which has a good reputation and is supported and funded by the regional government.
- A project concept which creates win-win situations: i. e. the council gets stability and lower energy prices for the future, they get rid of obligations to care for the technical equipment; for the performance contractor it is a profit making investment.
- The results of the energy saving, the energy consumption, is controlled and reported by the performance contractor. At least once a year, the results are communicated to the local council.

### *Reaction of the project manager to issues/problems*

During the period of discussion on performance contracting, some of the energy suppliers tried very hard to channel the discussion toward contracting. This just stopped as the decision by the local council was taken for performance contracting. One of them responded to the call for tender, but missed the point.

## Step 5: Outcome of process

### *Objectives/goals/outcomes*

The outcomes in terms of energy savings are higher than expected, even in the first year. Usually the first period is lower than expected so the forecast is quite optimistic to continue this way.

As an incentive to use even less energy, the contract includes an paragraph on how additional savings (exceeding the guaranteed ones) are shared between the partners. In the case of Rommerskirchen, the rate is 70/30 for the municipality. This rate is ambiguous. During contract negotiations this rate serves as a tactical instrument. In the operating stage it should be high enough for the contractor to develop additional (maybe financial) measures. If the rate is to little for the municipality, their willingness to support the operation decreases.

### *Effectiveness*

The programme was very cost effective and budget and timing were respected in all points.

### *Social learning*

In this case I assume that social learning was not aimed at. The changes last at least for the period of the contract (10 years).

### *Follow-up of the programme*

The energy commissioner has retired. His responsibility was not assigned to anyone else. He is continuing his work on a voluntary basis until the end of this year. An energy team consisting of 5-6 people is installed. Next year a new energy commissioner is installed in a part time job. As the main problems are solved, he can start other projects.

## **Step 6: analysis and conclusion**

The following are the five most crucial factors that shaped the outcome of programme:

1. The project could be realised by involvement of few people, as it is a small municipality.
2. Nobody was threatened by the project, neither jobs nor expertise.
3. A person inside the system took the initiative and was very convinced and convincing.
4. The local politicians were open for innovative approaches.
5. The realisation of performance contracting was more profitable, than doing it on their own account.
6. The hired contractor was experienced and reached its goals.