

# Energy Management Organisation and Financing Summary vademecum

## Intro

There are two major determinations for the state of art of energy management in municipalities:

- The energy prices and
- The awareness of the consequences of the greenhouse gas emissions.

Energy management was „born“ after the first energy (price) crisis in the mid 70ies. It was intensified after the next major rise of the prices at the end of the 80ies. Now we are facing a renaissance of energy management. The environmental awareness of the public and the political parties has risen significantly in the beginning of 2007.

During the summer of 2006 a questionnaire about energy management in municipalities in Saxony was developed and evaluated. More than one hundred (out of 300) municipalities showed their view of energy management. 80 % regard organisational measures (especially consumption control and projects to improve user behaviour) as the key sector. Two thirds of the municipalities think they should learn about financing of energy savings. Energy management was thought of more important for municipalities than renewable energies.

The ratio of governmental expenditures to gross domestic product was reduced from 1995 to 2005 by 5.4 % in the European Union. This fact leads to a financial crisis of the municipalities. Thus non-investive, organisational energy saving measures are much more accepted than investive.

## Realisation

The realisation of energy management in municipalities can be done either by internal or external personal and can be done just for one municipality or for a number of municipalities.

Normally it is done for a single town by internal personal. Nevertheless the other solutions have often been successful as well. The author never heard of a negative financial balance of energy management of a municipality.



## Organisational measures for energy saving

The following figure shows the major tasks not combined with certain investments



Figure 1: Tasks energy management

As stated by the municipalities taking part the first two tasks are of the greatest importance. A yearly Consumption control is recommended for buildings with heating costs above 2,000 Euros per year - a monthly consumption control for buildings of heating costs above 20,000 Euros per year.

Communication and user behaviour projects are necessary and effective as well. For the realisation the communities often need assistance from external personal which means a substantial obstacle in times of financial crisis an for small municipalities.



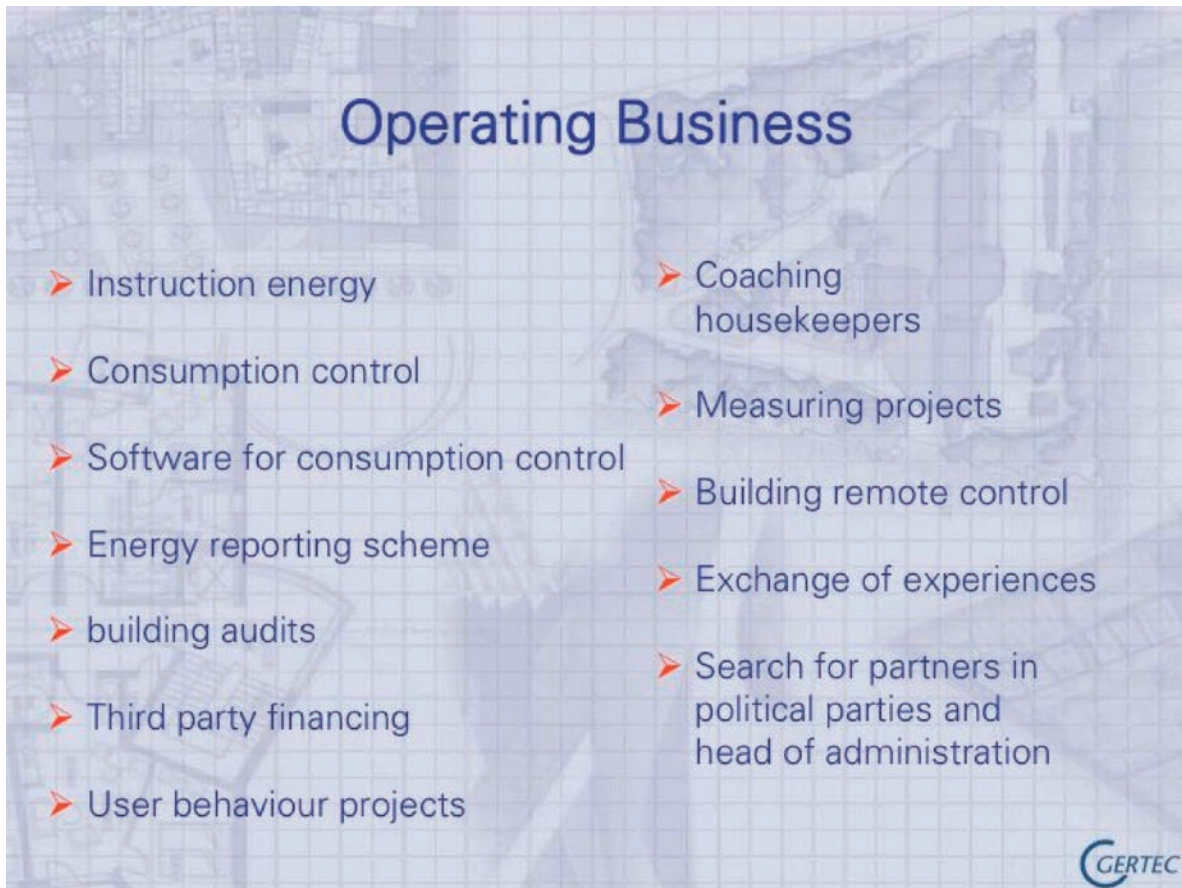


Figure 2: Operating fields

The key sectors in operating business are:

- Instruction of energy use in public buildings
- Improvement of heating control
- Energy report

Towns with a successful energy management implemented as well: Coaching of housekeepers, Measuring projects, consumption control systems and third party financing.

In Italy the whole operating business is regularly outsourced – thus it is more difficult to work with housekeepers. In Sweden as in Germany teachers could be integrated in energy saving projects. Their aim to teach real things will help to work with pupils on the energy use in (their) school.

Necessary is the support of the head of the administration and of the political parties.

### Localisation

The energy management is operated from the following departments of the administration:

- Construction
- Finance and social care
- Environment.

At last it can work as a staff unit connected to the head of administration.



Depending on the focus of the work the solution should be chosen. In Germany in most cases the energy management is allocated to the construction department. During the last years the financial aspect has become more important. So the attachment to the financial department became more frequent.

In major towns there are specific units or departments for rational use of energy in public buildings. In small municipalities the job is done often beside an existing position. The situation in small communities is easier to overlook, but the experience from Saxony leads to the impression that because of the necessary competences energy management is easier to install in medium and big municipalities.

The embedding of energy management in a structured process like "European Energy Award (EEA)" was very successful. A "downscaled" procedure for small and medium sized communities should be developed.

From the EEA processes one can learn that you must operate cross-sectional. You have to integrate the relevant stakeholders.

### Financial models

Most of the energy saving investment is financed by owned or loaned capital of the owner of the building. Nevertheless third party financing can play an important role as a way of both financing investments and operating of buildings (Rise in contracts 12% in 2005 vs. 2004 in Germany).

#### a. Third party financing

Third party financing is of increasing importance for the power supply of municipal premises. For the supply of heat you differentiate (according Verband für Wärmelieferung – [www.vfw.de](http://www.vfw.de) ; numbers from 2006) between

- Systems which are designed, financed, delivered and operated by the third party (Energieliefer-Contracting 83%)
- Contracts with additional non-investitive measures to reduce energy- consumption (Performance Contracting 8%)
- Contracts just to finance a new system (Finanzierungs-Contracting 4%) and
- Contracts to operate systems (Anlagen-Management 5%)

The second way (performance contracting) promises the largest energy saving but can only be used for buildings with slight changes in the use of the building. Therefore the first (Energieliefer-Contracting) is the common way.

In most cases (about 85%) the heat supply of the building is contracted. Sometimes (15%) the supply of electric is dealt with. The supply of cold and compressed air is of minor importance.

In case a municipality wants to influence the shell of a building they have to start a public private partnership (PPP). Because of the complexity of the contracts the investment must be above 15 million Euros – thus it is implemented for building pools and the set up of new buildings. The whole lifetime of a building and the management of the facility are usually covered.



In the orders of the contracts you can refer to ecological qualities (e.g. zero emission can equal 10% of the price). A preference of local craft is not foreseen but often chosen in order to optimise the operation and maintenance.

In order to optimise the prices you should pool buildings. For that one can cooperate with neighbour municipalities.

## **b. Conventional financing**

Normally the owner of the building owes or loans money to realise an investment in energy saving. By now there are no national subsidies in Germany for energy saving but there are reduced interest rates for such municipal investments (e.g. 2% - the conditions can be downloaded under [www.kfw.de](http://www.kfw.de) ). In Sweden you find special credits from the state to enable energy saving measures. In Italy there are credits or subsidies from banks for investments.

Some municipalities have extra budgets for energy saving investments. This instrument works well and leads to transparency.

You find federal subsidies for special technologies: (The state of Saxony contributes up to 50% of the investment in remote control systems <http://www.umwelt.sachsen.de/lfug/documents/Foerderrichtlinie.pdf> ).

Theoretically investments can be partly financed by the emission trade. The system for emission trade is established at a national bank (KfW).

Up to now the author hasn't got any notice of a municipality using or planning to use this way. GERTEC knows towns (Bremen) and private companies regarding ecological costs (e.g. 20 Euro/t CO<sub>2</sub>) for the cost effective analysis.

From Italy no example for financing investments by emission trade was reported as well.

## **c. Eco tax**

The eco tax in Germany was developed to enhance rational use of energy. The instrument worked but was badly explained to the public. As an eco tax does not benefit a certain technology (which is worth being supported) it is the silver bullet for energy saving.

## **d. Private capital**

Special foundations support investments in energy saving. Sometimes private persons loan money for renewable or pilot energy systems. That can be a good addition to the financing scheme ([www.solarundspaar.de](http://www.solarundspaar.de) : Solar systems and energy saving investments for 4 schools).

## **e. Municipal capital**

The town of Stuttgart started in the 90ies a foundation for energy saving investments in its own public buildings. A special department suggested and supervised the measures. In times of financial crisis the instrument lost importance.

**GERTEC GmbH**

**Jörg Ackermann**

**ENABLeIMPACT**

