

## Bridging the gap between economic and ecologic efficiency by individual energy consultancy – A case study

***Independent energy consultancy for private property owners of flats and residential buildings as a regional contribution to climate protection and strengthening the economy***

Verbraucherzentrale NRW (Consumer association North Rhine-Westphalia)

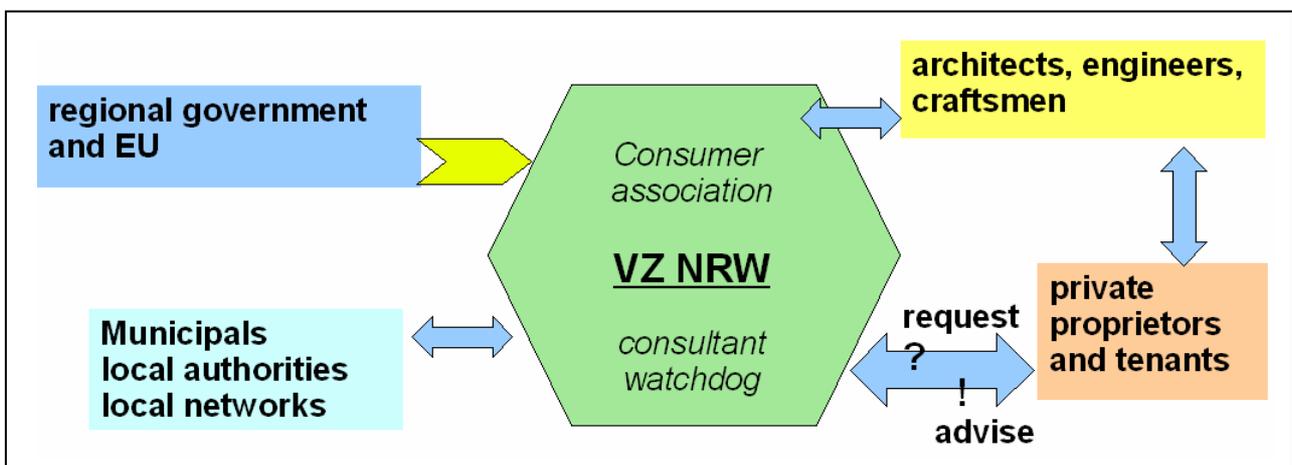
Martin Steinestel, Helfmried Meinel, Udo Sieverding, Petra Maier

### Objectives

The project of individual energy consultancy was designed to bridge the gap between climate protection and strengthening the regional economy.

The consultancy for private owners of flats and residential buildings was designed to increase the individual motivation of private households to invest in energetic modernization and to provide them with necessary technical information.

The measures recommended during an individual consultancy help to save energy on a long-term basis and improve the quality of buildings. The reduction of heating energy consumption and the improvement of thermal insulation contributes to decrease the private households' share in the greenhouse effect. House owners employ local and regional craftsmen to carry out the energetic upgrading. For more comprehensive projects - such as carrying out combinations of several measures - the house owners also assign architects and planners. This shows that private modernization of buildings is a sustainable investment in climate protection and strengthening the regional economy.



Networking for climate protection

## Frame conditions

Verbraucherzentrale NRW has carried out this project of neutral energy consultancy in the "Ruhr Area". When the project was beginning climate protection and energy saving have hardly been on the public agenda. The project region is especially characterised by a strong structural change. Many of the former coal-mining and coke- and steel-production sites have been closed and new technologies and services have been more or less successfully installed.

In this area called "Ruhrgebiet" are living about 5.3 Mio people on 4.432 square km (density: ca. 1.200 persons/km<sup>2</sup>). Since the 70s this area is characterised by an elevated level of unemployment compared to North Rhine-Westphalia (NRW) and the federal republic. The unemployment rate in the Ruhr Area was 13% in September 2003 (start of project planning). NRW had an unemployment rate of 10.7 and the federal republic 11.2 %. Concurrently, many people were leaving the Ruhr Area. This tendency continues. For the real estate this is a difficult situation because it might happen, that many houses can not be let. This threatens especially old houses with poor living standard and high additional property expenses, i. E. for heating-energy costs. The project focus on energetic renovation effects both aspects and thus increases the attractiveness of the region. The emphasis was also put on empowering the local economy, as it is assumed, that many of the recommended measures are implemented by local craftsmen.



## Energy consultancy project

The project was funded by the Ministry of Economic Affairs and Energy of the State of North Rhine-Westphalia and the European Union structural funds.

Verbraucherzentrale NRW as a non governmental organisation advises, supports and protects consumers throughout the state in all consumer related topics. As with all other topics also its energy consultancy is neutral and independent of any economic interest. The organization advises individually and from a holistic perspective by suggesting economic and ecological balanced measures. A high quality level is ensured by the fact that the energy consultants are well trained architects and engineers.

The public funding of the project is part of the regional development policy of the Ruhr Area related to the aim of energetic modernisation of its buildings. Many private buildings up to 8-12 accommodation units are in need of refurbishment and property owners face the problem of people leaving the region for good.

The energy-region North Rhine-Westphalia is trying to find a way from coal and other fossil fuels towards new and efficient energy technologies. The private consumers shall also be motivated to use efficient heating systems, improve thermal insulation, install renewable energies and to change their behaviour concerning heating and energy consumption.



Private households profit by reducing their energy costs, improving the quality of buildings and living comfort as well as climate protection measures, and a reduction in consuming fossil energy. The consultancy offer is designed to be an initial advise to help consumers create optimal plans for refurbishment measures. It opens doors for local craftsmen, architects and planners. The advise seeking consumers have been charged a small fee and contribute in this way to finance the project.

Many private buildings are underdeveloped concerning the energetic and the constructional quality. So it was important to find the right moment and bring together individual plans of measures with an optimized energy saving concept. The results of consultation were motivated house owners - ready to start and knowing the right order of carrying out the appropriate measures.

More than three thousand households have been consulted in 3.5 years. The consultants visited the houses, so they had a real impression of the state of the art. The result of evaluation by interviews of those consumers who had already been advised should give information about the needs of consumers and the success of the consultancies and the energetic modernization already carried out, induced or accompanied by the consultancies. Energetic and climatic values and the benefit to the regional regional economy by private investments should be determined.

## **Results**

To evaluate the results of the project the institute for Site and Facility Management Ahlen was assigned. They analysed the quality of the consultancy and the consequences of it in energetic and economic terms.

### **Behavioural change**

- More than 50% percent of all advised house owners have energetically upgraded their homes according to the recommendations of the energy consultancy.
- For more than 30 percent of all upgrades the consultancy was the only or the predominant factor for the decision of the owners to refurbish their building. The estimated economic effects are 18 times the invested project costs.
- 70 percent changed their behaviour in using heating and window ventilation.
- Nearly a third realised an improvement in their problems with humidity and mould by changing behaviour or constructional changes.
- The evaluation shows influences to a third party of the consulted households and a positive effect concerning the relation between proprietors and tenants.

## Climate and resources

With the private energetic measures from 2006 until the end of 2008

- a saving of 75.000 MWh / year in primary energy (ca. 17 MWh / year per building) and
- a reduction 23,3 Kilotons of CO<sub>2</sub> / year (ca. 5.5 kt per building).

have been realised.

## Financial and political effects

- The upgrading measures were mainly financed by the consumers own resources. 55 M. € private investments were made or in average 18,000 € per building (2/3 buildings with one or two appartements and 1/3 buildings with more than 3 flats).
- Many of the investments were supporting the local and the regional skilled craftsmen and building materials suppliers (> 80%).
- 50 percent private house owners used the support of architects and engineers.

Therefore a neutral consultancy is able to support the skilled craftsmen and promotes employment.

## Consulters satisfaction

Furthermore it could be shown that the consumers were highly satisfied with the quality of the neutral consultancy.

- About 62% of the customers are convinced that they have been prevented for misinvestments.
- 92% would come again to the consultancy,
- 98 % can recommend the service of the individual consultancy,
- 98 % are convinced of the public subsidies for an individual consultancy on energetic refurbishment.

## Conclusion

Therefore the regional offer to a neutral consultancy concerning energetic measures at private buildings is able to bridge the gap between economic and ecological efficiency and to contribute promoting local employment.

### Key Words

Energy + Houses;  
Regional Development, Private House Owners



### Conference presentation

*Joint Actions on Climate Change, 8-10 June 2009, Aalborg, Denmark*

### Project funded by



EUROPÄISCHE UNION

Europäischer Fonds  
für Regionale Entwicklung

