

Cross-border co-operation between Denmark and Schleswig-Holstein through INTERREG III A



Project information: EnerKo

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The German-Danish joint project 'Development of energy management structures among SMEs and local authorities', running from 2006 to mid 2007, is co-financed by the INTERREG III A Sønderjylland/ Schleswig EU Community initiative.

Projects in the nature, environment and energy sectors in the German-Danish border region are being supported through the INTERREG III A programme in the period 2001-2006.

Motivation to initiate the trans-regional INTERREG project

Rising energy prices worldwide are generating new problems for local authorities and small and medium-sized enterprises (SMEs). The additional expenditure is burdening SMEs' and local authority's budgets equally. Planned investment measures and technical upgrading in public properties have to be deferred because of the tighter financial situation. The lack of orders is an additional burden for craft businesses, whose competitiveness is further affected in a region already hampered by structural weaknesses.

This was the starting point for the “Energy Agency” of Investitionsbank Schleswig-Holstein in collaboration with the Danish partner “Enervision” and other participants to initiate an interregional project in the area of energy management for SMEs and communities. In addition financial alternatives to implement the restructuring actions are investigated in the framework of the project.

These actions base on already existing know-how and IT-tools which are already used in other regions successfully. The results of the project contribute to more transparency regarding energy flows in buildings and operational processes.

Therefore, investment decisions can be done on a more profound basis of economic criteria. The elaborated results are summarized as best practice examples in a guidebook for the planning procedure which can be downloaded on the project website www.enerko.eu. Positive side effect in this context is that surveyed data in public buildings can be used for energy pass ports which are obligatory for communities with buildings larger than 1000 m² since January 2006.

Further aspects are considered in the project: on basis of the surveyed energy data qualified evaluations and recommendations can be performed whether it is feasible to

- install decentralized block heat and power plants,
- change sources of energy,
- save energy and
- use renewable energy sources.

Especially important is looking at possible financing instruments to implement the identified necessary investments. Contracting is of high importance in this context.

Objectives:

The goal of the project is to relieve local authority budgets and to raise SMEs' competitiveness by performing energy management, consultation and reducing energy costs. Greater transparency concerning energy flows, costs and energy savings options should enable the target group to make economically and ecologically sound decisions on lowering energy consumption or more efficient energy production and use. In this context focus of actions were buildings, plants and operational processes.

Moreover, the data collected will be used by local authorities to produce the energy certificates for public buildings required by regulations from 2006.

The introduction of energy management enables the target groups to make economically and ecologically founded decisions to reduce energy consumption and to produce energy efficiency.

Target oriented events are performed where results, planning tools and the use of the internet are explained. By this way the companies and communities can profit directly from the results.

Moreover, it is expected that the activities of the project have a positive effect in other areas such as large residential buildings.

The project partners plan to initiate incentives for investments and give impulses to the border region regarding following topics:

- Reduction of heat loss and high energy costs
- Improvement of interregional collaboration and communication
- Experience exchange and know-how transfer between experts.

In order to implement the identified measures financing alternatives are elaborated. Here, various contracting alternatives are highlighted and explained (contracting to save energy, plant contracting, financing contracting, and operational contracting).

Target Groups

Activities are performed for following target groups on both sides of the border:

a) Small and Medium Sized Enterprises (SME)

In Sønderjylland and Schleswig craft businesses were selected which are typical for the region such as: dairy farms, bakeries, hair dressers, horticulture enterprises, hotels, restaurants, laundries, supermarkets, metal working enterprises.

In collaboration with the Chambers of Commerce of both sides of the border 10 typical enterprises were chosen to perform intensive consultation regarding energy flows, consumption and cost situation. In this context characteristic data were elaborated such as consumption in relation to production and size of the building. On this basis energy saving measures were elaborated as well as solutions regarding buildings and technical equipment such as lighting in premises, electrical drives, compressed air and cooling. Also, process chains were investigated and further energy cost reduction potential were highlighted (e.g. the use of different energy sources and the use of renewable energies).

Reorganization concepts were suggested by the Danish partners because they have extensive experience in survey of data, production of energy

reports and in consultation of SME.

b) Communities owned real estates

In two communities of the border region energy management structures were established in the framework of the project. Both communities show similar real estates such as schools, kinder garden, administrative buildings, swimming halls, street lightning and purification plants.

Energy management activities will enable the communities to have an overview over important energy relevant information of their buildings. This benchmark shows in which building which measures are necessary - for example energy saving actions for the façade or technical equipment. In addition further energy cost reduction measures such as change of energy sources or regenerative energy sources are highlighted. A final step in this process is that energy saving investments will be performed by communities.

Additional benefit of this project is that the data will be the basis for energy pass ports which are obligatory for public buildings covering more than 1000 m² since January 2006 (EU regulation).

The Energy Agency in Schleswig-Holstein has extensive consulting experiences regarding the target group “communities” across the border. Therefore, the German and Danish partners exchange know-how for the respective target groups in order to achieve efficient data survey and evaluation. Here, different IT-tools are used and compared. In this context the University of Flensburg with the department “Energy and Environmental Management” collaborates with the project partners.

General activities in the framework of the project:

In the border region Sønderjylland and Schleswig following activities are planned:

a) Establishing a trans-border network of experts and actors

The network has the aim to exchange know-how and information efficiently.

Communal energy experts (e.g. working group of the energy assigned actors of the region) and freelancing engineers' offices are integrated in the network via the Chambers. By the means of regular workshops all actors are kept up-dated about the status, next steps and results of the project.

b) Development of energy management

Activities in this context:

- Selection of 10 typical enterprises from the service sector and craft businesses in the border region
- Selection of two communities with comparable real estates in the border region
- Intensive energy consultation is performed regarding buildings and electrical facilities
- Development of communal energy management with survey of relevant energy data, evaluation of the situation regarding energy consumption & costs, elaboration of energy saving measures regarding feasibility and CO2 reduction potential
- Use and evaluation of different IT-tools to perform energy controlling and management
- Production of energy pass ports for selected public buildings
- Explanation of the results in form of guidebooks for the planning process

- Implementing a project website
- Target group oriented workshops in collaboration with the Chambers and regional working groups.

c) Elaboration of financial alternatives

Apart from the classical financing possibilities, financing alternatives through third parties are researched for economically meaningful energy saving measures. Examples are financing contracting and Public Private Partnerships. The variants are explained to participating SMEs and communities of the project. The services include the support in selecting suitable offers and to introduce the tendering process for the planned investments.

d) Selection and evaluation of IT-tools regarding their user friendliness to improve energy efficiency in SME and public buildings.

There are already several IT-tools (calculation models) to systemise energy consumption data available. Hence, the project aims to choose for the respective target groups the most efficient programme. The tools are tested in collaboration with the energy-assigned persons in the participating firms and communities. Both Internet as well as standard practices are used in the framework of the project.

Implementation of sub-project “SME”

Together with representatives of the Chambers ten craft businesses were selected which are typical for the border region. Following sectors are in this context of relevance: dairy farms, bakeries, hair dresser, horticulture enterprises, hotels, restaurants, laundries, supermarkets, metal working enterprises.

Getting in contact with the target group as well as the selection of the SME is done by mailings, information events and on-site visits. In this context

SME with a significant high energy consume are chosen.

Intensive energy consultation is performed in buildings of craft businesses looking at facades, roofs, windows, soil-affecting construction units, electrical facilities (lighting system, electrical drives, compressed air and cooling) and production processes. On the basis of the collected data IT-tools are developed and/or used which enables via simple “energy-checks” a transparent overview over energy consumption and possible reductions.

Then the respective energy-assigned persons are supported by a benchmark (according to the type and of the company and the source of energy used) in order to classify their company regarding energy consumption. Beyond that, energy experts calculate if the installation of a decentralised block heat and power plant is feasible. In addition the change of the source of energy (such as wood) or regenerative energy (such as photovoltaic or geothermal energy) is investigated.

The implementation takes place in following steps:

- Selection of craft businesses
- Survey of physical data of buildings, technical equipments and operational processes looking at: electricity, heat, natural gas, fuel oil, water and others
- Production of energy reports with explanations of energy saving potentials (quantitative and qualitative)
- Explanation of further energy cost reduction potentials by integrating a block heat and power plant and changing the source of energy.

Special focus is put on cross-border planning activities and the development of controlling tools for energy and water consumption. In order to evaluate the process and the results of the project there are regular experience exchange meetings for the participating entrepreneurs.

Results:

- Regular meetings of participating entrepreneurs
- Development of a database and benchmark of chosen businesses which show high energy consumption (data is up-dated every month)
- Development and implementation of training and information modules for participants
- Production of guidebooks for planning activities explaining results in form of presentations in sector specific workshops – activities are performed in collaboration with the Chambers.

Implementation of sub-project “Communities”

The selection process of the two communities is performed in collaboration with the respective regional associations in Schleswig-Holstein. The project manager contacted the target group by mailings, information events and on-site visits. Out of the pool of real estates buildings were chosen which show high energy consumption and are comparable with real estates of other communities of the project.

The survey and data analysis of the buildings as well as energy and water consumption data are performed respecting following concept:

- Selection of the real estates and survey of physical data of buildings
- Development of a matrix of the energy data
- Survey of the data respecting the categories: electricity, heat, natural oil, and water
- Production of reports with explanations of energy saving potential (quantitative and qualitative)
- Explanation of further energy and cost reduction measures by integrating a block heat and power plant as well as the change of energy source

- Evaluation of the situation in terms of energy consumption, improvement and restructuring having the “EU building regulation” in mind
- Evaluation of the buildings by using an agreed on typology of the real estates
- Survey of the physical data of the buildings and plants such as year of construction and already performed restructuring measures
- Calculation of the current energy consumption of the buildings
- Weak point analysis and suggestion of restructuring measures with cost calculation.

Of high importance is trans-border planning activities and the development of controlling instruments regarding energy and water consumption. In order to evaluate the process and the results of the project there are regular experience exchange meetings for Danish and German communities.

Results:

- Regular meetings of participating communities
- Development of a database of selected buildings showing high energy consumption (data is up-dated every month)
- Development and implementation of training and information modules for participants
- Database showing the physical data of the public buildings and technological data of the facilities where restructuring measures are necessary
- Development of a benchmark with characteristic data for classification in order to classify and evaluate roughly the restructuring measures
- Experience exchange on energy saving restructuring measures between communities and other project participants

Energy passports for public buildings according to EU building guideline

Within the project data has been surveyed in collaboration with actors responsible for the respective real estate property on both sides of the border. This data can be used for energy passports with suggestions for energy saving measures in accordance to the EU regulation. In the passports energy consumption, physical of the buildings and technological data of the facilities are evaluated by labelling with the help of energy efficiency categories. In addition the passports highlight suggestions for restructuring measures and further information for experts. Thus they go beyond the requirements of the European building guideline.

Results:

- Energy passports for all evaluated public buildings
- Summary of all passport data in a database covering both sides of the border
- Report explaining all restructuring and modernization measures with economical computation of the investments, savings and amortisation.

Financing instruments

The objective of the trans-border project lies among other things in the support of implementing the identified restructuring measures. Apart from classical financing instruments (loans) and are other financing possibilities in the border region (e.g. communal investment funds) alternative instruments such as “contracting” are investigated. Especially in Germany there are good experiences respecting contracting. Nevertheless, in *Schleswig* (border region) there are so far few communities ready to choose this form of financing and alternative operation option by third party. Following actions can be mentioned in this context:

- Analysis of possible financing instruments
- Development of contracting models with stepwise implementation of restructuring measures for private and public buildings evaluated within the project
- Explanation of the contracting market in the context of the planning guidebook
- Example computation of contracting models in comparison to classical financing possibilities
- Description of financing alternatives in the context of the presentation of the results.

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