

Energy Performance Contracting in Berlin, Germany

Summary

The Energy Saving Partnerships which we initiated in 1995 in co-operation with the Berlin Senate, are long past the test phase. Our concept has not only served to convince state bodies to renovate obsolete systems and simultaneously reduce energy costs, but decision makers from industry and commerce have also become involved in the partnerships. The Berlin Energy Agency has meanwhile set up 10 Energy Saving Partnerships with more than 300 buildings for the Berlin Administration. This pours over 1.7 million Euro directly into the State treasury. "Performance Contracting made in Berlin" has even made a name for itself as an export product. Our knowledge and experience as project managers for innovative forms of saving energy is called upon in other German Federal States, in the EU and East European countries. This Berlin win-win strategy has had a knock-on effect!

Type of Project

1. Rational use of Energy:

Buildings

Energy management

Third Party Financing

BACKGROUND

Introduction

The Energy Saving Partnership was developed and implemented in Berlin with the aim of reaching ambitious objectives for climate protection and reducing energy costs in the face of a tight budgetary position. Our Berlin model for saving energy can now be easily transferred to other local authorities and projects in the free market economy.

The basic principle is quite simple: the Energy Saving Partner – the so-called contractor – pumps his know-how and the necessary financial means into the project. It is his responsibility to ensure adequate investments are made in the buildings and thus to guarantee the energy savings. Both partners share a handout of the cost reductions. Profits are reaped by both client and contractor – not forgetting important benefits for the environment!

Location

Berlin, Germany

Objectives

An Energy Saving Partnership normally runs according to the following method:

The client (for example the local authority) is responsible for the upkeep of various buildings, such as nursery schools or offices. It is bound by contract to energy suppliers who deliver electricity and heating (i.e. gas or oil). In order to reduce energy, costs and damaging levels of carbon dioxide, the client transfers the financing, planning, implementation and controlling of energy saving measures to a private energy saving partner – the so-called contractor. The successful contractor undergoes a tendering process. The existing contracts between the client and the energy suppliers covering the delivery of electricity and heating are not affected by the project. The contractor, however, agrees the necessary technology and supply with the energy suppliers.

An Energy Saving Partnership is not only applied to energy saving in large building complexes. The Berlin model is a conscious effort to pool smaller projects and create “building pools”. These pooled buildings have different levels of energy consumption, construction material, fixtures and fittings which leads to profitable cross calculations and also means that seemingly unprofitable buildings are integrated into the project.

The contractor signs a contract to guarantee the client a minimum level of energy savings. Experience shows that over 25 % of energy costs can be reduced – savings not normally realisable by a (state) owner of real estate on his own. The contractor only receives his agreed earnings if the stipulated energy savings are reached. The client is also able to save money through savings on heating and electricity achieved through the energy efficiency measures.

The investments carried out by the contractor are re-financed through the savings. Any remaining savings are shared by the partners according to a ratio system agreed to in the contract for the duration of the project. The contractor remains responsible all this time for the maintenance and service of the systems. The client profits from all cost savings once the contract has expired.

It is not merely a matter of trust which binds a contractor to the project. In order to ensure long-term quality, the co-operation has to be based on a balanced contract. The Energy Saving Guarantee Contract developed in the State of Hesse in the “Hessian Guidelines for Contracting in State Buildings” ensures the highest possible degree of reliability. It takes all the specific demands of the project into account and legally guarantees the client’s interests. The contract includes all details of technical measures taken, the nature and extent of any investments made by the contractor as well as duration and level of savings. All areas of responsibility, the maintenance and the rights of proprietary and usage are clearly laid down in the contract.

The contractor is responsible for the performance of the technical systems and therefore also for any risks caused if the systems break down.

He also guarantees the client a minimum level of targeted energy savings and carries any financial risks – if, for example, interest rates rise.

The client provides the contractor with the necessary factual basis to make correct calculations for the duration of the project. This involves adjusting his annual energy costs (the so-called baseline) to account for climatic changes and alterations in consumption and energy prices. The following example offers an illustration: if the building is used for more purposes than originally thought, the contractor is not burdened by any unforeseeable rises in energy consumption.

The partners also agree to matters in addition to the guaranteed savings. This can act as an incentive for the building's "users" – such as tenants – to save even more energy than stipulated by the contract.

In order to achieve the best possible results from the Energy Saving Partnerships and the smooth running of the project it is advisable to involve a project manager well versed in the subject matter and the market. The technical, economic and legal demands of the project have to be co-ordinated and optimally represented in the competitive market. This does not necessarily mean that the wheel has to be constantly reinvented: the project management draws both innovative and standardised instruments into the process, e.g. in data-processing or in appraising tenders. This allows the building owner to effortlessly acquire optimal conditions for the contract based on his individual needs. The project manager also accompanies the client as consultant during the entire duration of the contract, for example if the utilisation of individual buildings within the pool changes to such an extent that the whole energy consumption is affected, or if individual buildings have to be sold during the partners-hip. The project manager negotiates between the partners in such cases and ensures that the Energy Saving Partnership is continuously optimised and kept up to date.

Duration

Since 1995 and ongoing

RESULTS

Since 1995 in total 318 public buildings in Berlin, grouped in 10 pools were contracted to private investors. In addition one pool of 14 buildings was contracted in Slovenia.

The total investment in Berlin allocates up to now to € 24 million and the private investors guarantee for savings of 22,9 % (average over all pools).

The yearly cost savings amount to € 1,7 million/a for the public households, whereas the contractor is already paid from the total energy cost savings which amount to € 5,9 million/a.

The CO₂ Reduction amounts to yearly 32.000 tons.

REPEATABILITY

There is an enormous increase in the interest in Energy Saving Partnerships as a model instrument. The concept is not restricted to public real estate. Hospitals, universities, hotels and modern office buildings are also able to save energy, carbon dioxide and a great deal of money.

New standards are being set through the increase in the number of Energy Saving Partnerships. Hospitals which save energy through Energy Saving Partnerships are now awarded a seal of approval by the BUND - German League for Environment and Nature Protection - a predicate for optimal energy management.

Energy Saving Partnerships have an enormous potential. The energy costs of all public buildings in Germany could be reduced by 20 %. This means cuts of over 350 million Euro per year. At the same time, environmentally harmful emissions of carbon dioxide could be reduced by 20 to 30 %, i.e. by about 3 million t/a.

In addition the model has been already transferred to Slovenia and will be further implemented in Central and Eastern European Countries through the project "Clearinghouse for TPF in Eastern Europe" which is supported under the SAVE-Program.

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Printed reports or other literature available:

Energiespar-Contracting als Beitrag zu Klimaschutz und Kostensenkung

Ratgeber für Energiespar-Contracting in öffentlichen Liegenschaften

Umweltbundesamt (Hrsg.), Berlin 2000

Partnerschaft mit Einspargarantie

Energieeffizienz steigern, Kosten senken, Umwelt schützen

Energieeinspar-Contracting für öffentliche Liegenschaften

Hessisches Ministerium für Umwelt, Landwirtschaft und Forsten (Hrsg.), Wiesbaden 2000

Anlagenmodernisierung und Kostensenkung garantiert

Energiesparcontracting als Managementstrategie im Gesundheitswesen

Berliner Energieagentur GmbH (Hrsg.), Berlin 2001