

Public-Private Partnerships

BERLIN (Germany)

At the local authority level, implementation of innovative projects – but also of simple remedial measures – is increasingly being impeded by a lack of human resources and of both material and intangible resources. One way out of this bottleneck is to increasingly involve private-sector companies in such projects, for instance within the context of franchise agreements, various forms of contract energy management (CEM) and other energy service schemes. 5 years ago, a novel project idea was developed and implemented in Berlin: the 'energy conservation partnership', the Berlin performance contracting model for building pools. Today this has become a model not only for local authorities but also for industry and commerce.

THE CITY

Berlin, capital city of the Federal Republic of Germany and at the same time one of Germany's federal states, has some 3.5 million inhabitants. Today the city, which is still in the throes of restructuring, is viewed as a symbol of how East and West can grow together successfully. Berlin is the seat of numerous federal authorities and industrial companies (notably in electrical engineering). However, Berlin, located on the Havel and Spree rivers, is characterized just as strongly by its numerous museums, galleries, theatres, its Philharmonic Hall, opera and universities, or the botanical and zoological gardens.

Climatic data:

Heating degree days: 2 540
Annual mean temperature: 9,7 °C



CONTEXT

In winter 94/95 Professor Lutz Wicke, then secretary of state of the former Berlin senate environment administration, now the senate urban development administration, raised the basic idea of energy conservation partnerships for the first time. The Berlin energy agency (Berliner Energieagentur) was commissioned by the senate administration to develop this idea into a functioning model tested in practice.

The Berlin 'energy partnership' (Energiepartnerschaft) is a model of effective energy-efficiency (performance) contracting. It was developed in Berlin in order to meet climate and energy policy goals despite very tight budgets, while at the same time saving costs.

In Berlin the idea was born to aggregate several buildings to a pool. Such pools comprise buildings with different use structures, structural states of buildings, equipment and savings potentials. This heterogeneous composition permits the contractor to engage in profitable compensatory pricing and at the same time ensures that seemingly unattractive buildings are not left out.

The financing, planning, implementation and maintenance of energy-efficiency measures in these buildings is transferred – through a tendering procedure – to a private-sector energy-efficiency partner (the ‘contractor’). The contractor invests in order to meet his contractual commitments – namely to tap cost-effective savings potentials and to finance the necessary measures.

EXPERIENCE IN BERLIN

Project development

Based on experience gained with the pilot projects in building pools 1 and 2, and creation of the technical, legal and organizational prerequisites and framework conditions, a firm project structure has evolved. First, the basic building- and energy-specific data are collected. Then suitable buildings and pools are selected.

The next step is to set up a project steering group with all participants. This group defines the pools and establishes goals and a schedule. On the basis of energy consumption levels and costs, the baseline for the envisaged savings is calculated, and specifications concretized.

This is followed by the sometimes difficult search for the best contractor. A Europe-wide call for tenders is issued. The tendering process is based on a ‘guaranteed energy savings contract’ (Energiespar-Garantievertrag) that has been developed on the basis of the experience made. The tenders received are compared and negotiated individually (with a formal public notification procedure and subsequent negotiation procedure pursuant to German contract award regulations (VOL/A Abschnitt 2)).

After successful conclusion of the guaranteed energy savings contract, the contractor prepares implementation of the services agreed – and savings can commence.

Main elements of the contract

Building upon the experience made and contract wording proposed for the first pools, the senate administration for urban development and the Berlin energy agency, together with a law firm, have elaborated a standard guaranteed energy savings contract. This provides a tried and proven contractual instrument which other local authorities can now also use.

The main elements of the Berlin guaranteed energy savings contract are:

- A savings guarantee – valid in itself under German law – of the contractor concerning the level of savings
- Stipulations on maintenance and repairs of the energy-relevant installations by the contractor
- Stipulations on the type and volume of investments to be made by the contractor
- Stipulations on the quality, compatibility and service life of the system components
- The provision that the investment already passes into the ownership of the building owner when it is installed. (This creates security for the event of insolvency of the contractor. The client can thus continue the measures on its own accord!)

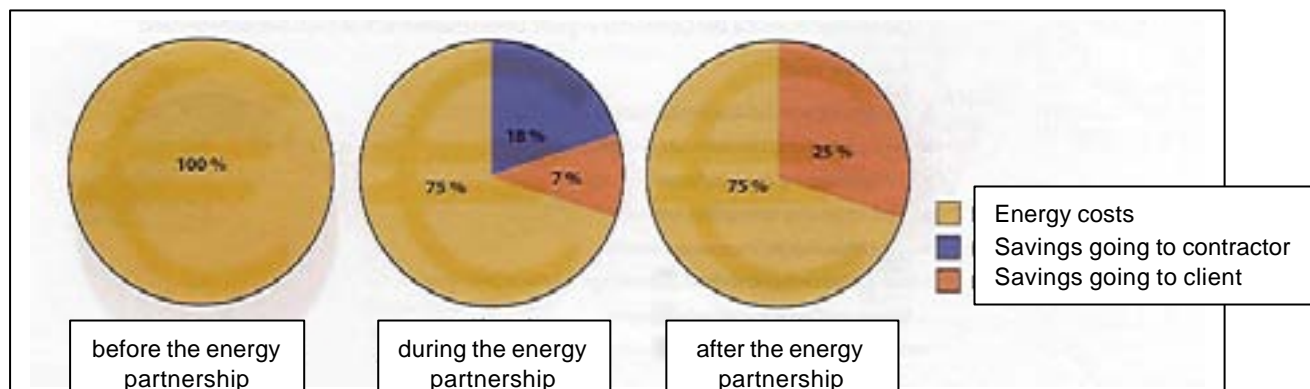
Distribution of tasks

The contractor bears the full responsibility for the functioning of the systems, and thus also the risk in the event of malfunction. Moreover, the contractor guarantees to the client a minimum level of achievable energy savings and bears the financing risk if, for instance, bank interest rates change.

The client provides calculation security for the contractor over the whole contract duration by normalizing the originally determined annual energy costs (baseline) for possible changes in climatic conditions, use and energy prices. This means for instance that if the use of the building intensifies, the client relieves the contractor of the burden of any associated rise in energy consumption.

Monitoring savings

Actual savings are compared continuously to contractual commitments, and deviations recorded. The experience has been that savings tend to be higher than originally planned.



What happens if more is saved than stipulated in the guarantee? This surplus is distributed according to percentages stipulated in the contract; the share can favour the client in order to additionally motivate users to behave in an energy- and cost-conscious manner. If savings are lower than anticipated, then the guarantee of the contractor applies. The costs of the client are reduced in all events.

Facts on the pools

In the Berlin energy conservation partnership, contracts had been concluded by September 2000 for 6 pools with a total of more than 220 buildings. 4 further pools are currently in the contract award phase. 4 different contractors have been involved until now. Contract duration ranges from 12 to 14 years. Savings potentials vary from building to building, generally ranging between 5% and 60%. In total, some Euro 15 million have been invested to date in energy-saving measures by the energy-efficiency partners, of which the greater part takes place in the first year of the contract. Today, the resultant energy cost savings of the city of Berlin have already totalled Euro 7.5 million.

Facts and figures on Pool 4 (Pankow district)

In 1998 the Berlin district of Pankow decided to enter into an energy conservation partnership with a contractor. This was a novelty. In the first building pools, various city-wide Berlin administrations had always operated as contract parties under the umbrella of the environment administration of the Berlin senate. The advantages of the district-level Pankow partnership are plain: less friction and less need for consultation on the goals of the contract.

In addition to technical measures to reduce energy consumption, motivation of building users is also a part of the contractor's service package. Thus janitors are trained, pupils are stimulated with 'conservation kits' to work actively on the subject and children are made aware of the issue in a playful manner.

The following table lists the parameters of the individual pools:

		Pool 1	Pool 2	Pool 3	Pool 4	Pool 5	Pool 6
Buildings	Number	39	42	37	55	36	24
Baseline costs	kEuro/a	4,608	4,900	3,020	2,400	1,710	670
Baseline consumption	MWh/a	85,000	90,000	52,540	51,940		17,120
Duration	a	12	12	12	14	14	14
Termination		31.12.08	31.12.08	01.10.10	01.03.14.		31.01.15
Investment	kEuro	3,940	4,240	2,000	2,050	2,610	600
Guaranteed savings	%	~20*	~20*	15.7	24.2	23.6	22
Savings of client	%	9.0	11.25	6.28	7.1	6.7	4
Actual savings in each year compared to pool baselines (1999 is a forecast)							
Savings in 1996 (incomplete year)	%	6.4	18.1				
Savings in 1997	%	13.4	23.0				

Savings in 1998	%	18.8	23.3	9.3			
Savings in 1999 (forecast)	%	~ 20	~ 25	~ 16			

* In the contracts for Pools 1 and 2, liability for guaranteed savings covers only the share of the client.

EVALUATION AND OUTLOOK

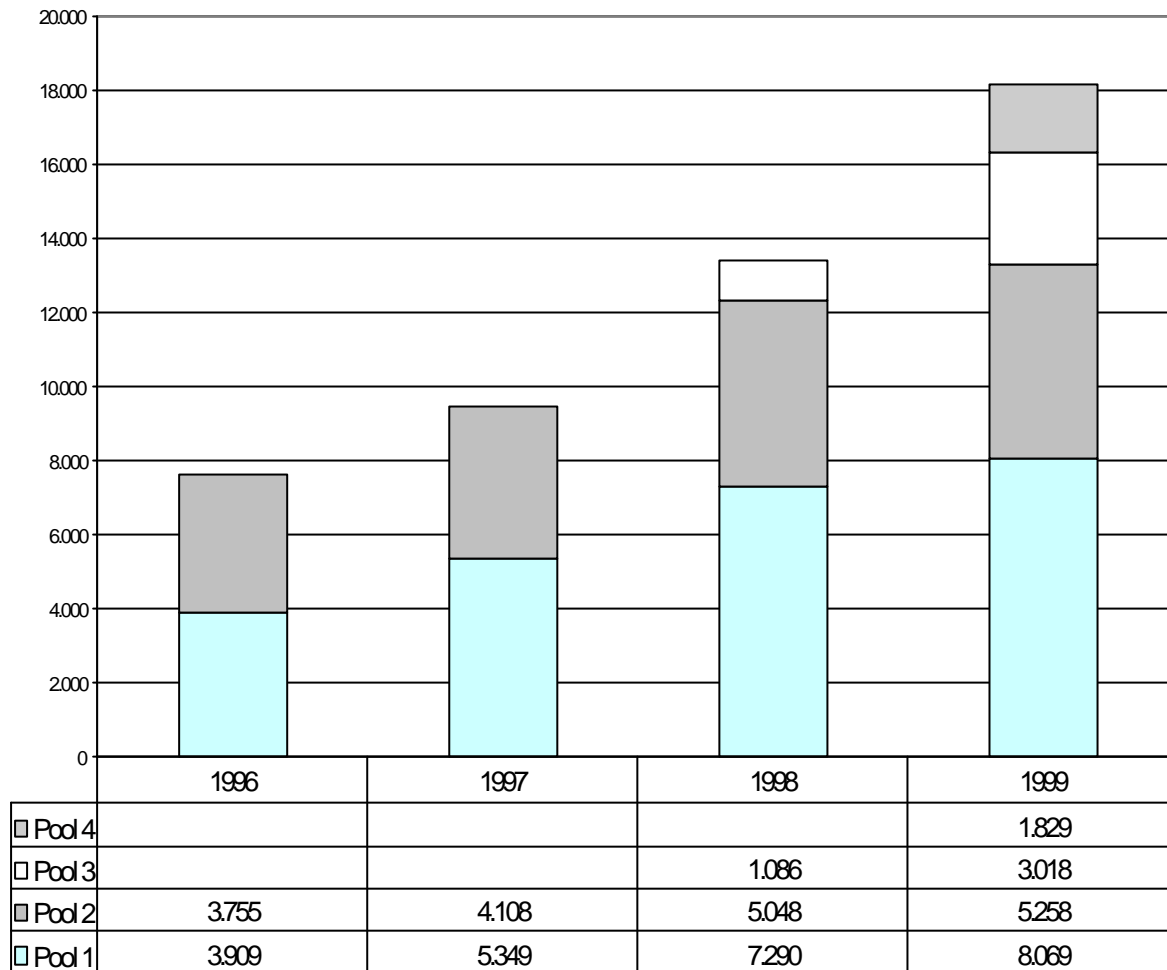
The energy conservation partnership approach in Berlin has been a resounding success. From the first project with Pools 1 + 2, from which both sides learnt a great deal, a fully replicable model has now emerged. This is benefiting the current partnership negotiations. The idea of district-specific pools has now become widely accepted, as they are far easier to handle than city-wide pools. Energy conservation partnerships for individual buildings, including a hospital, initiated and supported by the Berlin energy agency, are due to be set up soon. The approach is not limited to public facilities, but is similarly suited to hotels, office buildings, residential buildings or, as these examples show, universities and hospitals.

In a Berlin district an expanded energy partnership is currently being developed with the goal of transferring building renovation and management measures to the contractor in a new pool. The energy and water cost savings shall at least partly finance the structural rehabilitation, operation and maintenance of the buildings.

Interest in the 'Berlin model' is growing continuously. It is readily transferable to other projects, even in the private sector. In Germany a number of other states and municipalities have already made use of the Berlin experience.

The following figure shows the development of greenhouse gas emissions reductions in the first four years of the project for building pools 1–4 (*figures in tonnes of CO₂ equivalent*).





FURTHER INFORMATION

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