

Energy Performance Contract for 309 buildings of Sofia Municipality

Lulin Radulov

Black Sea Energy Research Centre (Bulgaria)

Introduction



CONCERTED ACTION
ENERGY SERVICES
DIRECTIVE



- In 2001, Sofia Municipality decided to search for an external contractor to manage the thermal systems in a part of its building stock; the municipality had no relevant personnel for this task.
- Energy Performance Contracting (EPC) was selected, because pre-audits identified lots of economically feasible energy savings.
- No EPCs have been implemented in Bulgaria before.
- The energy efficiency legislation was undeveloped – no specific provisions supporting public-private partnership, such as EPC.

Public procurement



CONCERTED ACTION
ENERGY SERVICES
DIRECTIVE



Procedure

Restricted procedure for selection of the contractor - only few companies are invited to the competition

Scope

309 centrally heated public buildings of different type & function: schools, kindergartens, nursery schools, hospitals, administrative buildings.

Obligations of potential contractors

To operate the thermal systems for 7 years and implement measures resulting in >25% energy savings while keeping the normative comfort.

Selected contractor

Company for Energy Savings (CES), later purchased by Dalkia-Bulgaria

Financial provisions



CONCERTED ACTION
ENERGY SERVICES
DIRECTIVE



- All investments are paid and implemented by the ESCO.
- “Shared savings” contract - the ESCO and customer share the savings generated by the EPC.
- The municipality’s share gradually increases from 5% in Year 1 to 20% in Year 7.
- After the project end, only the municipality profits from the savings.

Energy saving measures



CONCERTED ACTION
ENERGY SERVICES
DIRECTIVE



Energy saving measures implemented during the contract period (07/2002 - 07/2009):

- New thermostatic valves on the radiators – 100 % of the buildings
- Reflection foil behind the radiators – 100 % of the buildings
- New modern substations with PLC – 100 % of the buildings
- Remote Control System – 20 % of the buildings

Financing and risks



CONCERTED ACTION
ENERGY SERVICES
DIRECTIVE



Financing

Cost of operational and investment activities: 3.85 million EUR

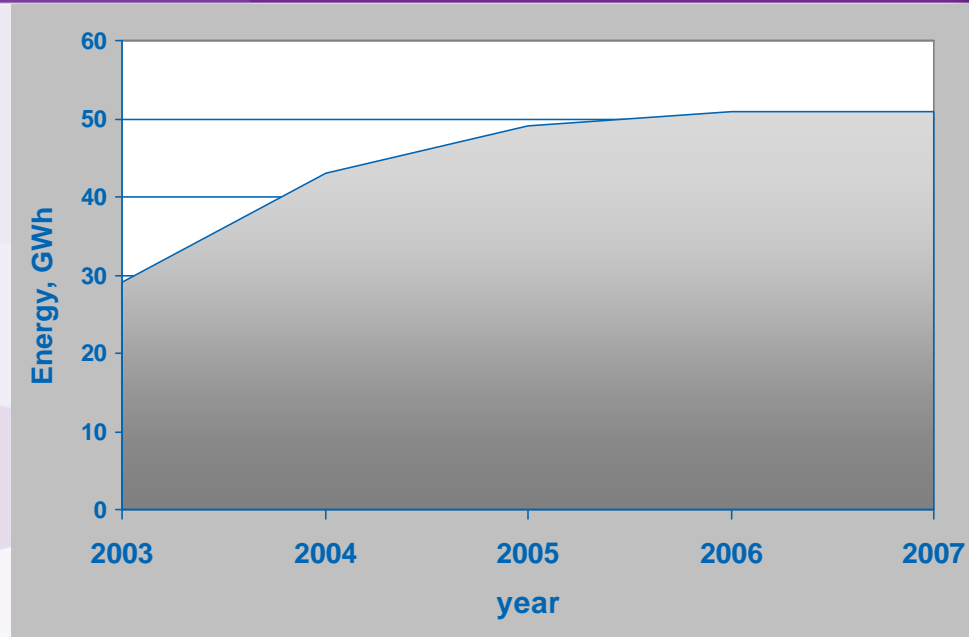
Two funding sources:

- Bank loan
- Equity capital of CES

Risks

- Difficulty to achieve the agreed 25% energy savings. The risk originated from the lack of sufficient and reliable data about the building stock and energy consumption - only partial energy audits and few documents.
- Lack of experience in EPC.

Results



- 50 GWh annual energy savings (0.5–1 TWh project lifetime savings) corresponding to 30% energy reduction of the buildings consumption
- Nearly 8.5 million EUR energy savings
- Emission savings during the 7 year contract: 90 000 t CO₂

Benefits from the PPP



CONCERTED ACTION
ENERGY SERVICES
DIRECTIVE



Main benefits from the EPC project:

- Energy savings
- Emission savings
- Faster implementation of saving measures
- Higher quality of services
- Long term contract
- Better risk allocation
- Cost savings for the client during and especially after the contract
- Profit for the ESCO

Thank you for your attention



CONCERTED ACTION
ENERGY SERVICES
DIRECTIVE



Lulin Radulov

Black Sea Energy Research Centre

Tel: +359 29806854

Web: www.bserc.eu

Email: radulov@bsrec.bg

