

Model 2

Berlin Energy Saving Partnerships

City of Berlin – Germany

OWNERSHIP	PUBLIC/PRIVATE
Program authority	Federal state of Berlin, Senate Department for Urban Development and the Environment
Program Delivery unit	Berlin Energy Agency (BEA)
Implementation Model	Energy Performance Contracting (EPC)
Operating Services	Marketer Facilitator Financial advisor Aggregator
Projects Financed	Energy Efficiency (building retrofits)
Ambition/targets	Market based 26 projects with investment amount of 53M€ with an average of 26% energy savings.
Beneficiaries	Local authorities (95%) Health Care Sector (5%)
Funding Vehicle	Financial institutions ESCOs Property Owners
Financial Instruments	Equity/own funds EPC Financing Loans Grants

Summary

The Federal state of Berlin in partnership with Berlin Energy Agency (BEA) has initiated in 1996 the “Energy Savings Partnerships” for improving energy efficiency in public buildings in Berlin. They project manage the retrofit of public and private buildings, preparing tenders for works that will guarantee reductions in energy consumptions of an average of 26% based on Energy Performance Contracting (EPC) with the private ESCO sector (Energy Services Companies). In this program, BEA acts as project marketer, aggregator and facilitator, as well as financial advisor for the beneficiaries of the program (federal and local authorities).

So far 1.400 buildings have been upgraded or retrofitted, delivering CO₂ reductions of more than 70,000 tonnes per year.

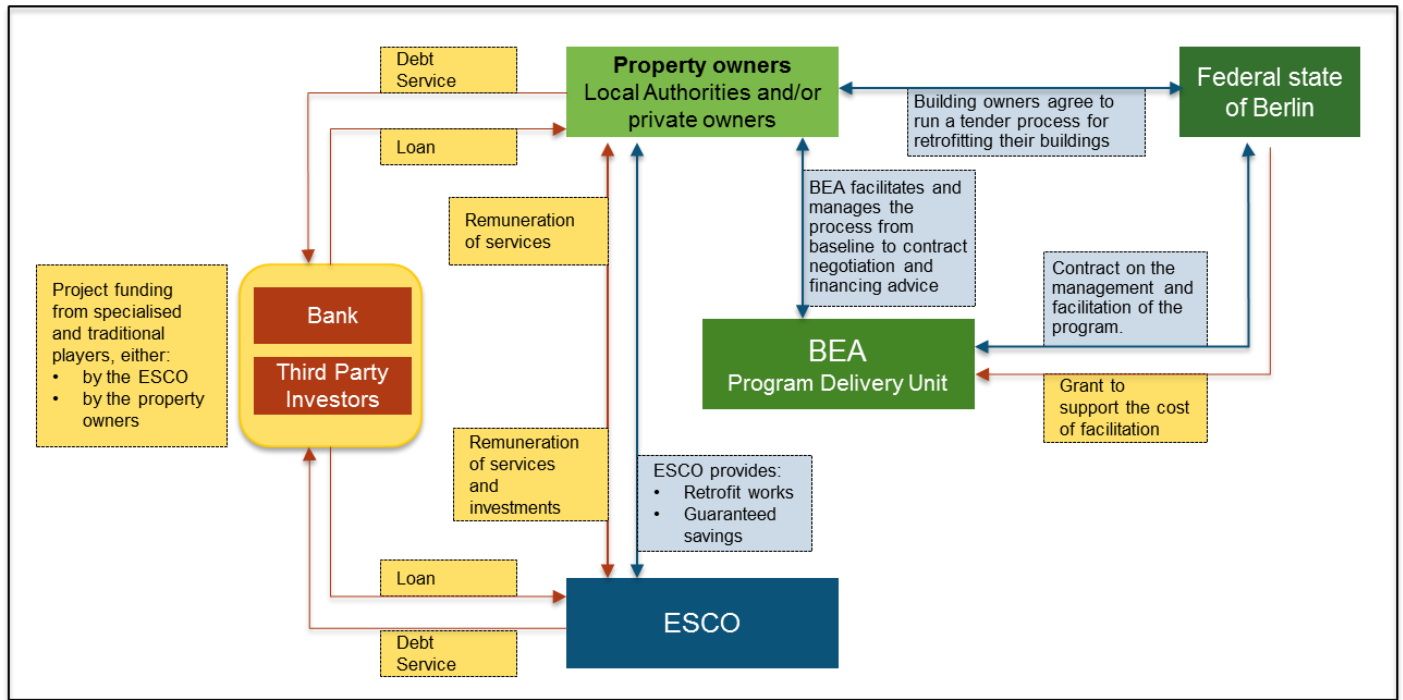
As the programme is based on EPC with guaranteed savings and as the majority of these energy retrofits investment are being reimbursed to the ESCO from the majority of the energy savings there is no additional cost for the property owner.

The retrofit comes at no additional cost to the property owner as the idea is that the majority of the guaranteed energy savings is being used to the reimbursement of the investment to the ESCO, and that a small portion of the energy savings is being kept by the property owners as immediate savings on their energy bills.

How does it work?

- The Federal state of Berlin, through the Senate Department for Urban Development and the Environment, initiates the Energy Saving Partnerships between building owners – typically various Berlin district administrations – and the ESCOs. The property owners agree to establish an EPC-tender process for retrofitting their building to cut back on energy consumption.
- BEA then acts as the independent project manager, facilitating and managing the process from baseline to contract negotiation. BEA plays also the role of projects aggregator, bringing together a number of buildings, from 4 to as many as 150. These pools then issue EPC-tenders.
- The selected ESCOs installs the guaranteed energy efficiency measures and pay for this retrofit upfront. The property owners reimburse the investments done by the ESCO over an agreed period – usually 8 to 12 years- in annual instalments from the energy savings. Typically around 80% of the annual savings are paid to the ESCO. Once the contract has come to term, the property owner benefits from the full energy savings.
- As financial advisor, BEA assists both the property owners and the ESCOs to decide on the reimbursement terms of the investments supported by the ESCO. Funding of the investments is made in a classical way through bank loans taken either by the ESCO or by the property owner.
- BEA is able to offer its services to the property owners with a considerable discount (50%) as a result of the joint 50/50 funding (grant) from the Senate.

Fig 1. Operational and financial model



The program delivery unit

BEA (Berlin Energy Agency) is the program delivery unit under assignment of the Federal State of Berlin and acts as marketer, projects facilitator, projects aggregator and financial advisor for the beneficiaries (property owners).

BEA is a public/private partnership between the government of the federal state of Berlin, the governmental development bank KfW Bankengruppe and private stakeholders.

BEA operates as an energy services company in Germany and internationally. In Germany and abroad, BEA prepares energy concepts, provides project management and advice on the implementation of innovative energy service models in buildings (e.g. Energy Savings Partnerships in more than 1,400 public buildings in Berlin) and promotes the use of renewable energies. It also assists in the implementation of modern energy management. Furthermore, its scope of business includes awareness raising and information campaigns targeting end users, decision makers and multipliers.

Legal structure	GmbH Gesellschaft mit beschränkter Haftung (Limited Liability Company)
Shareholder description	Public-Private Partnership
Equity	2,56M €
Shareholders	Federal State of Berlin (25%) - Public Vattenfall Europe Wärme AG (25%) - Private GASAG Berliner Gaswerke AG (25%) - Private

	KfW Bankengruppe (25%) - Public
Program dedicated staff	Moderate – 5 FTE
Program operational costs	Moderate Less than 10M €

Organization and partnerships

Federal State of Berlin through the Senate Department for Urban Development and the Environment: takes political decisions, initiates the program, assigns the program delivery unit, supports the cost of the program delivery unit via grants.

Berlin Energy Agency (BEA): developed the staff, procedures, tools and services for the program. It offers program delivery unit services such as programme marketing, project facilitation, projects aggregation, and financial advice.

Local partner banks: contribute to the program funding through loans.

Beneficiaries

Beneficiaries	Local authorities Health care sector SME's & Businesses
Type of projects	Energy Efficiency (building retrofits)
Operational support	Projects facilitation through the program delivery unit
Financial support	Projects facilitation costs free of charge

Funding mechanism

Program delivery unit funding	BEA is being funded by the shareholders. The program delivery unit operational costs are funded by grants from the State and District Municipals Government
Projects Funding	Projects are being funded by loans taken either by the ESCOs or the Property owner. In some cases, the Property owner is funding projects on equity/own funds.
Funding Vehicle	ESCO's Property owners (own funds)
Fund size	Not applicable
Fund type	Not applicable
Fund sources	Not applicable
Financial Instruments	EPC Financing Loans Grants

Achievements

So far, 26 projects have been realised by end of 2013 covering 1.400 buildings with a global investment of 53,0M €. The projects have led to total guaranteed savings of around EUR 11,9M € or 26% of the energy bills.

Some results in detail:

Property Owner	Investment (Mio EUR)	Baseline (Mio EUR/year)	Savings	Funding	Contract duration (years)
Berliner Bäder Betriebe	7,9	4,9	33,5%	ESCO	10
Berliner Immobilienmanagement	2,4	2,07	21,0%	ESCO	10
Bezirk(district) Steglitz Zehlendorf	2,8	1,84	29,4%	ESCO	14
Deutsche Oper Berlin	1,48	0,65	35,8%	ESCO	12
JVA Tegel	2,5	1,8	33,0%	ESCO	12
Pankow Berlin (lighting)		0,88	10,2%	ESCO	2
Pankow Berlin district	1,77		24,2%	ESCO	
University of Arts	1,1	0,86	27,7%	ESCO	10
Wenckebach Hospital Berlin	2,44	0,8	39,6%	ESCO	12

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Factsheet

General Info

Country	Germany
Model Name	Energy Savings Partnerships
Date of creation	1996

Model Description

Ownership	Public-Private
Program authority	Federal state of Berlin, Senate Department for Urban Development and the Environment
Program delivery unit	Berlin Energy Agency (BEA)
Operating services	Marketer Facilitator Financial Advisor Aggregator
Implementation model	Energy Performance Contracting (EPC)
Types of projects	Energy Efficiency (Buildings retrofit)
Beneficiaries	Federal and local authorities (95%) Health Care Sector (5%)
Geographical coverage	Regional City of Berlin (3,4 million inhabitants)

Financial Mode Description

Project funding	Public-private
Project funding vehicle	Financial institutions ESCOs Property Owners
Financial instruments	Equity/own funds EPC Financing Loans Grants
Repayment model	Guaranteed savings agreement

Project risk Profile

Performance risk	ESCOs
Recourse	Property Owners
Financial risk	ESCOs Property Owners

Model Requirements

Staff Requirements	Moderate 5 FTE
Equity Requirements	No equity required
Funding Requirements	Moderate Less than 10M€

Model Key indicators

Investment volume since creation	53M €
Size of project (or project portfolio)	1.400 buildings retrofitted with project size between 4 to 150 buildings per project.
Level of average energy savings	26% in average

Development maturity

Development/implementation stage	Mature
Operational development maturity	Mature
Financial development maturity	Growth

Model Qualification

Level of establishment	Well established
Growth of potential	Large
Scalability of the model	High
Replicability of the model	High
Impact on public balance sheet	Moderate

Sources

<http://www.berliner-e-agentur.de/>

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Berlin Energy Agency Brochure, Image brochure of the Berliner Energieagentur GmbH, published by Berliner Energieagentur GmbH