

## Beyond Energy Action Strategies



### D.3.2. – Workshop report on bankable projects and business models

**Title of the Workshop:** Development of business plans and techno-economical analysis of energy performance contracting on municipal level

**Date realised:** 16 March 2015, 22 June 2015, 30 June 2015

**Location:** City hall municipality of Beersel, Meise, Londerzeel



**Submission date:** 10/09/2015\_final



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## 1. General

<b>Topic</b>	<b>Development of business plans and techno-economical analysis of Energy Performance Contracting on municipal level</b>
<b>Date</b>	<b>16 March, 22 June, 30 June</b>
<b>Location</b>	<b>City hall municipality of Beersel, Meise, Londerzeel</b>
<b>Number of participants</b>	<b>23 (Beersel (9) + Meise (6) + Londerzeel (8))</b>

## 2. Objective

The scope of the workshop on business models focuses on the local authorities (municipal level) and the evaluation of a budget plan for the long term maintenance roadmap for the municipal building infrastructure. The project evaluates the opportunities of the cooperation with ESCOs and Energy Performance Contracting to finance and realize the investments that are needed to upgrade their building infrastructure.

## 3. Description and overall evaluation

The analysis starts with an evaluation of the present building maintenance strategy of the municipality.

As the municipal building stock is mainly maintained rather in an ad-hoc way than in a systematic way with a long term view, a new structure for maintenance activities is proposed to the municipality. Creating an overview of maintenance planning is important as the large building stocks of the municipalities need to be renovated. Without basic information, the municipality cannot decide on a maintenance policy or estimate the required budget for renovation and a long term maintenance roadmap.

Gathering a wide range of information will be necessary to develop a tailor made Building Masterplan in line with the future needs of the municipality.

- An assessment of building needs in the future (demographic trend and needs in the region)
  - o Is a new building necessary in order to meet the space requirements or can the municipality make use of other existing assets?
- Evaluate the long term use of the existing buildings
  - o Evaluate the durability and life cycle of the buildings
  - o Evaluate the possibility of multiple-use/conversion if existing use is no longer needed
  - o Evaluate the level of occupation
- Level of building maintenance during the last decades

This analysis aims to define the long-term strategy for the patrimony of the municipality and the current state of the buildings and technical installations of the patrimony.

By evaluating the possibility to cluster functions in existing buildings, looking at the mobility aspects of the public buildings (public transport and accessibility by bike ) and considering the future needs and tendencies, the analysis gives an extended framework for determining a real estate investment plan. This evaluation might also result in selling properties and an investment in some key properties.

After this analysis, the workshop focuses next on the project identification and the financial viability of an EPC-project to reach the ambition level to upgrade the municipal building heritage.

In the preliminary phase and technical analysis, technical information of the building stock is gathered.

During the project identification, based on the present condition of the building envelope and the technical installations, the buildings are assigned to a classification of EPC –models:

- EPC Maintenance: focuses on quick wins and re-commissioning of technical installations.
- EPC Building Technology: measures on technical equipment
- EPC Comprehensive Refurbishment: measures on the building envelope, deep retrofitting

In the preliminary financial analysis, an overview is created of the financial resources of the municipality for the building maintenance. The municipality can choose to create a combined credit with the ESCO for the implementation of EPC Comprehensive Refurbishment.

#### 4. Outcomes and conclusions

The techno-economical analysis and the scope and ambition of the EPC project are key elements to create a building pool for an economic feasible EPC project. A typical EPC project requires a baseline (yearly energy cost) of +/- €500.000.

Besides defining the scope of the EPC project during the workshop, the municipalities also created a very extensive database with highly valuable information about their patrimony. The database also defines the framework for future steps in the EPC project: both EPCFacilitator and ESCO can use this information, and this will speed up the process and make it more cost-efficient.

To consolidate the scope of the EPC project, a principle-agreement will be agreed by the executive board of the municipality. This agreement contains the buildings that will be part of the EPC project scope and the commitment of the municipality to continue the EPC project by appointing an EPC facilitator and an ESCO and implementing the first energy efficiency measures within the timeframe (2015-2016).

#### 5. List of Participants

See **Appendix 1: List of participants** for the complete list of participants. A separate list for every municipal was made.

## 6. Agenda

The workshop of each municipality had a timeframe of 3 hours.



1. EPC- Coaching project
2. Why EPC?
3. Techno-Economical Analysis of the building heritage and defining of the scope and ambition of the project.
4. Next steps

## 7. Photos



Workshop Meise 22-06-2015



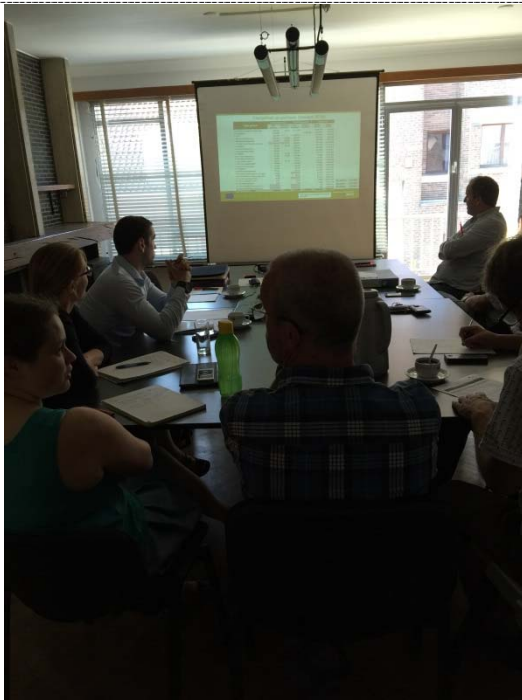
Workshop Meise 22-06-2015



Workshop Meise 22-06-2015



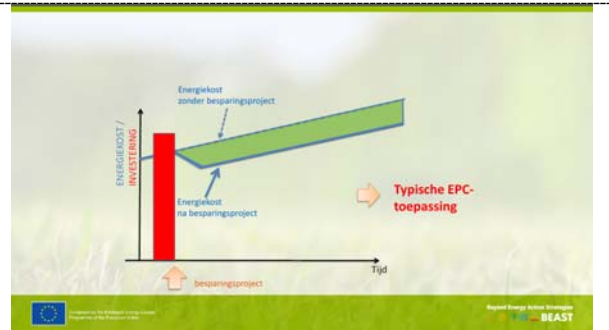
Workshop Londerzeel 30-06-2015



Workshop Londerzeel 30-06-2015

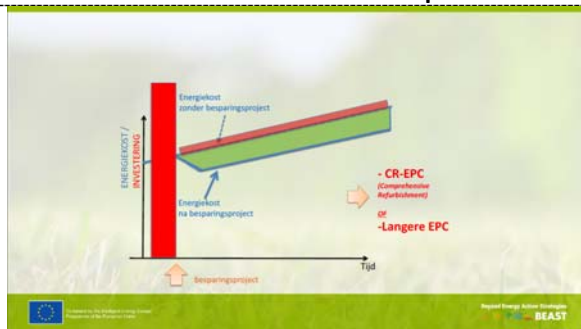
## 8. Dissemination material

Include here pictures, scanned copies, press clippings, presentations print screens and other dissemination material related to the workshop



Presentation Worskshop

Presentation: Typical EPC Contract



**Energiekost op jaarbasis (baseline 2014)**

Energiekost voor het kalenderjaar 2014

Gebruik	Distributiekosten	Zonnepanelen	gas 2014 (y/m²)	kerstjaar	normaal
6 WZC De Ceder	411480		1433021	€ 186.292	€ 166.292
1 CC De Meent (gegevens 2013)	327371		1100962	€ 130.384	€ 296.676
11 Sportcomplex LOT	122668	35491*	402769	€ 59.925	€ 356.600
2 De Grote Sluiter (gegevens 2013 - wordt verkocht)	23665		797408	€ 43.384	€ 401.984
3 Admistr: Centrum Rondobos	119008		329079	€ 43.314	€ 445.298
13 Publiekverkeercentraal (2013 - wordt verkocht)	142093		364833	€ 48.912	€ 406.110
7 Sporthal Beersel	61412	10340*	308539	€ 34.304	€ 520.474
10 OCMW Huizingen	97314	5729**	146496	€ 29.797	€ 550.181
4 LambiekKantoren aan DDC (zonnepanelen in eigen beheer)	98054	37948**	128583	€ 27.276	€ 577.484
5 OES Lot (eest. Beerselvestak)	45363		324507	€ 26.798	€ 604.222
9 Lagere school Huizingen	29187	18330*	377651	€ 26.542	€ 630.734
8 Basisschool Dierp	28162	18122*	303328	€ 25.100	€ 652.344
12 Sportbaan Dierp	37518	11221*	114401	€ 19.500	€ 672.104
<b>Totaal</b>	<b>1844167</b>	<b>82413**</b>	<b>807944</b>	<b>€ 672.864</b>	<b>€ 672.864</b>

\* Zonnepanelen in concessie - inbegrepen voor energiekost  
 \*\* zonnepanelen in eigen beheer - niet inbegrepen voor energiekost

Prisj elektriciteit ON: 0,020€/kWh  
 Prisj zonnepanelen concessie: 0,020€/kWh  
 Prisj gas: 0,056€/kWh

Normaal gebruikt voor vergelijking (zelfde hoogte van investering)

Presentation: EPC Comprehensive refurbishment

Presentation: Baseline Beersel



Presentation Beersel : Gaz usage-benchmark

Presentation Beersel : Electricity usage-benchmark

**Begrotingen**

Voorziene begrotingen verschillende investeringssoorten algemeen (in € per jaar)

Begrotingsoort	2013	2014	2015	2016	2017	2018	2019
Wat is het budget dat de komende jaren beschikbaar is voor de begroting van deze werken te realiseren?	200.000.000	200.000.000	200.000.000	200.000.000	200.000.000	200.000.000	200.000.000
Wat wordt er ingezet om energie-efficiëntie te verbeteren in de gemeentelijke gebouwen van het patrimonium?	100.000.000	100.000.000	100.000.000	100.000.000	100.000.000	100.000.000	100.000.000
Wat is het jaarlijkse begroot budget voor onderhoud van de gebouwen en alle andere daarmee samenhangende maatregelen?	100.000.000	100.000.000	100.000.000	100.000.000	100.000.000	100.000.000	100.000.000

Table with multiple columns showing detailed budget breakdowns for different investment categories and years.

**Presentation Beersel: Multi-annual maintenance planning**

### EPC<sub>Onderhoud</sub>

Gebouw	EPC <sub>Onderhoud</sub>		Een 2014 (€/h)		
	Distributieset	Zonnepanelen	gas 2014 (€/h)	kost/jaar	cumul
11 Sportcomplex LDT - nieuwe zaal <i>(90% van totaal verbruik op basis van beschrijving)</i>	76329	17745*	230284	€ 29.962	€ 29.962
10 ODMH Huisgen	97134	5730**	146495	€ 29.707	€ 59.669
4 Lambiccentrum en DOC	90634	37942**	120583	€ 17.276	€ 57.337
<b>Totaal 2014</b>	<b>264278</b>	<b>17745</b>	<b>505462</b>	<b>€ 86.944</b>	<b>€ 86.944</b>
		<b>43678**</b>			

\* Zonnepanelen in concessie, niet opgenomen in de energielast  
\*\* Zonnepanelen in eigen beheer, niet meer opgenomen in de energielast

Raming besparing a.d.h.v. volstrengs					
Maatregel	Investering (% t.o.v. baseline)	Besparing per jaar (% t.o.v. baseline)	Investering (€)	Besparing t.o.v. baseline per jaar (€)	TyT (jaar)
Re-Cool Quick Wins	10% - 30%	15%	€ 8.094 - € 26.083	€ 13.042	0,67 - 2

**Presentation Beersel: Evaluation of future needs (functions, trends)**

### EPC<sub>Technieken</sub>

Gebouw	EPC <sub>Technieken</sub>		Een 2014 (€/h)		
	Distributieset	Zonnepanelen	gas 2014 (€/h)	kost/jaar	cumul
6 WZC De Ceder	411480		1433021	€ 166.292	€ 166.292
1 CC De Meent (gegevens 2013)	327971		1300852	€ 130.384	€ 296.675
10 Sportcomplex Beersel	43412	16240*		388339	€ 34.364
<b>Totaal 2014</b>	<b>800464</b>	<b>16240</b>	<b>2927412</b>	<b>€ 331.039</b>	<b>€ 331.039</b>

Raming besparing a.d.h.v. volstrengs					
Maatregel	Investering (% t.o.v. baseline)	Besparing per jaar (% t.o.v. baseline)	Investering (€)	Besparing t.o.v. baseline per jaar (€)	TyT (jaar)
HVAC, verlichting + EPC <sub>aanpak</sub>	150%	25%	€ 491.559	€ 82.760	4

**Outcome Beersel: project definition (1)**

### Comprehensive Refurbishment (CR) - EPC

Gebouw	EPC <sub>CR</sub>		Een 2014 (€/h)		
	Distributieset	Zonnepanelen	gas 2014 (€/h)	kost/jaar	cumul
9 Legue school Huisgen	29187	19339*	377651	€ 26.562	€ 26.562
11 Sportcomplex LDT - oude zaal <i>(90% van totaal verbruik op basis van beschrijving)</i>	76329	17745*	230284	€ 29.962	€ 56.525
<b>Totaal 2014</b>	<b>105516</b>	<b>37085*</b>	<b>608036</b>	<b>€ 56.525</b>	<b>€ 56.525</b>

\* Zonnepanelen in concessie, niet opgenomen in de energielast

Raming besparing a.d.h.v. volstrengs					
Maatregel	Investering (% t.o.v. baseline)	Besparing per jaar (% t.o.v. baseline)	Investering (€)	Besparing t.o.v. baseline per jaar (€)	TyT (jaar)
Isolatie, ramen + EPC <sub>aanpak</sub>	450% - 600%	> 30%	€ 254.981 - € 338.148	€ 14.957	15 - 20

**Outcome Beersel: project definition (2)**

### Samenvatting EPC

Type EPC	Gegevens energieverbruik en -kost		Investering (€)	Besparing t.o.v. baseline (€/jaar)	Besparing t.o.v. baseline (€/jaar)	TyT (jaar)
	totaal verbruik kWh	totaal energielast (€/j)				
1. Onderhoud en regeling via EPC	581824	€ 57.237	€ 8.094 - € 26.083	15%	€ 13.042	0,67 - 2
2. Typische EPC besparing	3272904	€ 296.675	€ 498.559	25%	€ 82.760	4
3. Comprehensive Refurbishment (CR) - EPC	1218827	€ 90.888	€ 254.981 - € 338.148	30%	€ 14.957	15 - 20
<b>Totaal</b>	<b>5289944</b>	<b>€ 474.800</b>		<b>24%</b>		

**Outcome Beersel: project definition (3)**

**Outcome Beersel: project definition : overview**