

Provincial Helpdesk Energy Management

Building Energy Efficiency and Refurbishment
by EPC in municipal buildings

Province of Flemish Brabant (Belgium), local action SAVE

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✓ Ondertekeningsmoment Burgemeestersconvenant:
58 gemeenten gaan voor minstens -20% CO₂ tegen 2020

25 juni 2014



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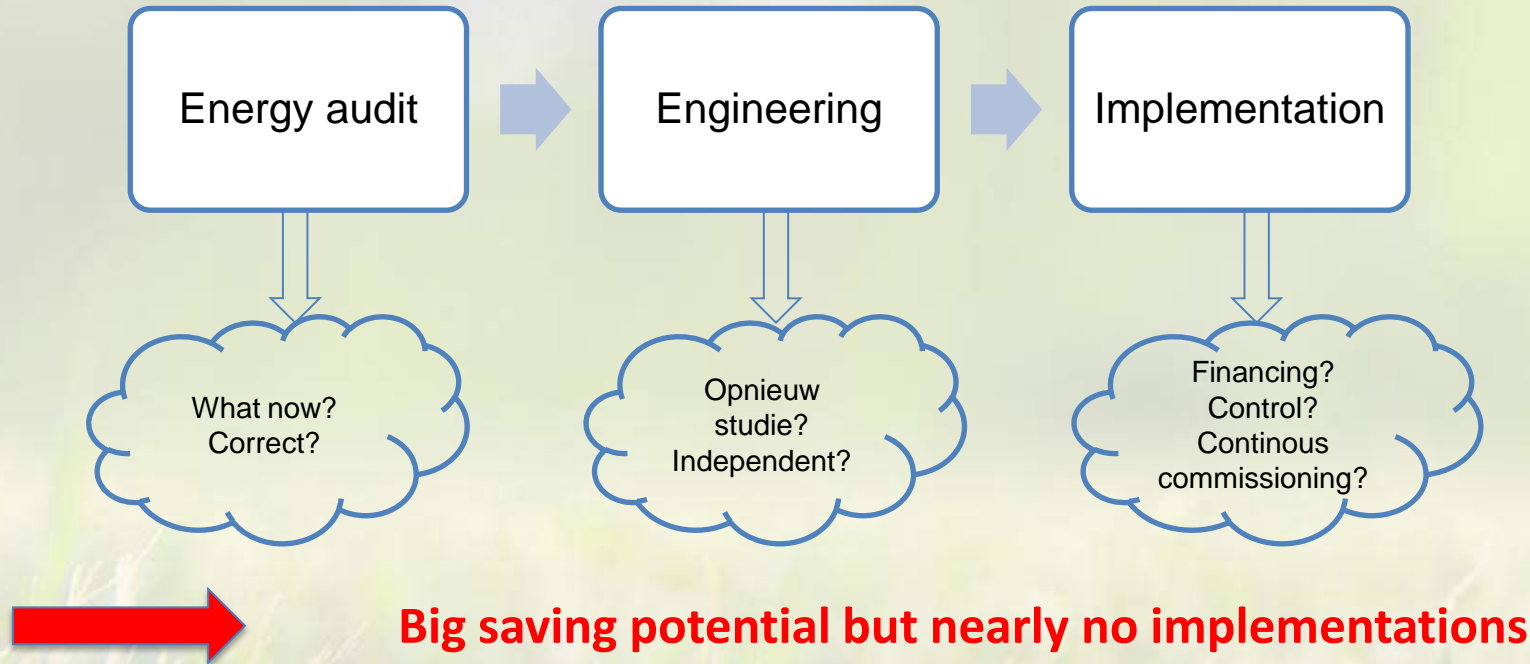


Provincial Helpdesk energy management

- **Former project (2010 – 2011): 104 energy audits in 37 municipalities**
 - Big energy saving potential (1000 MWh if all measures are implemented)
 - Audits were considered as a library book collection within the municipalities
- **Provincial Helpdesk Phase I (2011 – 2014)**
 - Support to review technical project tender specifications
 - Support to set up an energy management plan for the total of building property
 - Support to set up action plans (Quick wins and energy management actions)



Pitfall of a classical approach



Sustainable Building Management

- **To be able to make bigger steps and realising SEAP's, next steps are needed:**
 - Integration of the Energy Efficiency Action Plan into a Municipal Policy
 - Sustainability ambitions (Climate neutral, Energy savings) must be **integrated in a Long Term Building Management and Investment Planning**



Energy Performance Contracting

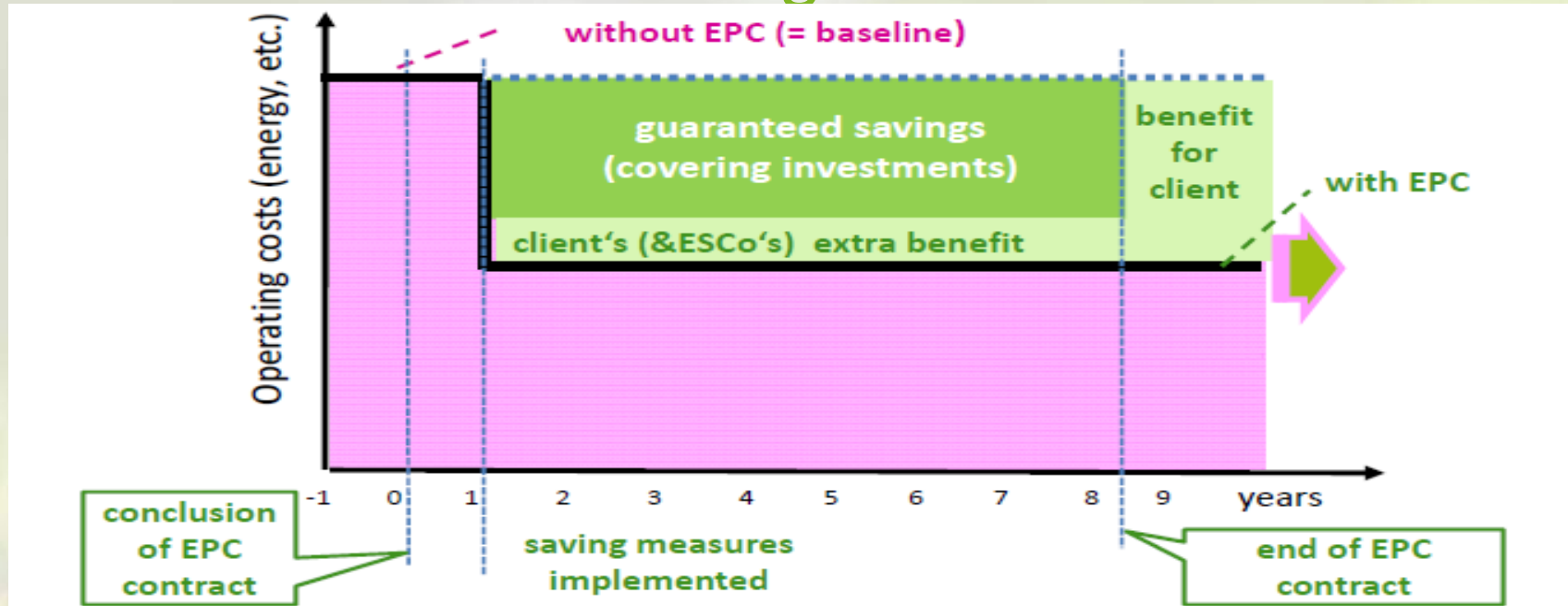


- **Energy Efficiency investments are repaid directly from cost savings**
 - Cost savings = energy savings and related financial savings
- **Without the need for up-front capital**
 - As investments are repaid directly from cost savings, there is no need for up-front capital on the customer's side
- **ESCO 100% responsible, less follow-up cost by building owner**
 - No input control required of maintenance



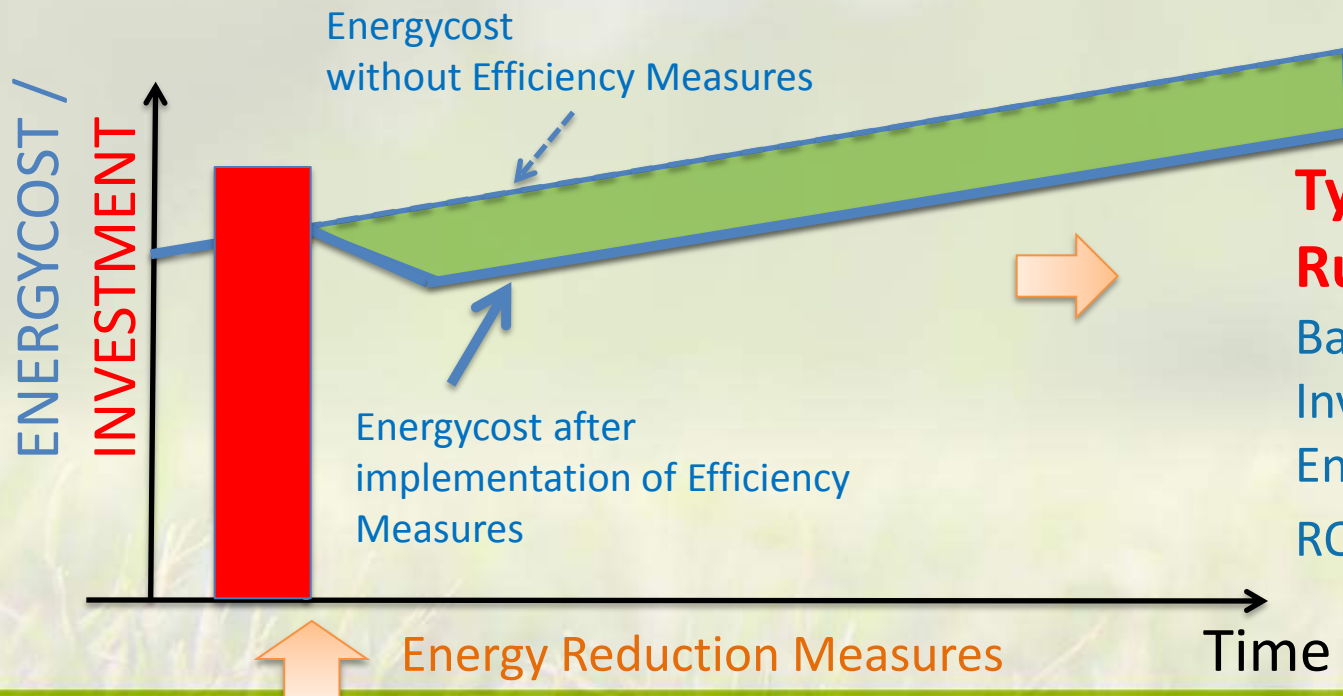
Energy performance contracting

Cost savings in EPC



Typical EPC-project

Renovation Technical Installations ROI 4-9 year



Typical EPC-project Rule of Thumb

Baseline: €500.000

Investment: €750.000

Energy Reduction: 25%

ROI: 6 years



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EPC-Coaching trajet

1

Training on EPC

Provide general and apprehensible information and training on EPC to the different stakeholders of the Municipalities

2

EPC diagnosis/Pre feasibility study

Check the feasibility of EPC for the building stock of a specific municipality

Baseline (energy cost/year)	Benchmarking (kWh/m ²)	Evolution energyuse
Results of existing energy audits	Analysis of the building heritage	Ownership (owner/tenant)

Analysis based on data, audits and expert spot advise

Workshop "EPC feasibility" + reporting

Result : Evaluation on the feasibility for EPC for the building heritage

3

Analysis of the technical, operational, financial and legal implications (JAM SESSION)

Jam session with all stakeholders of at least 3 municipalities (Mayor, Aldermen, technical and environmental team), Financial and legal experts, municipalities of other regions that implemented EPC. Important phase to remove barriers.

4

EPC-facilitation kick-off

Determine ambition level and scope of the project. Start-up EPC-project: assist the municipality to appoint a EPC-facilitator.



Goal of the EPC-Coaching Traject

- The expected result is that **15 municipalities participate in the project**. The project support will lead to at least 10 municipalities that will implement an Energy Management Strategy and related action plan. The objective is that **5 municipalities will start up Energy Performance contracting with an ESCO**.
 - Energy Management and action plan results in 5 % energy reduction
 - Energy Performance Contracting results in 25 % energy reduction



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1

Training on EPC

Provide general and apprehensible information and training on EPC to the different stakeholders of the Municipalities

ENGAGEMENT AGREEMENT

- Commitment to participate in all the steps of the coaching proces: step 1 till 4.
 - Delivery of all necessary data of the buildings
 - Participation of the stakeholders in workshops and feedback sessions
- No obligation to start up an EPC-contract
- Obligation to realise an energy reduction for the building pool with minimum 5% vs baseline



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2

EPC diagnosis/Pre feasibility study

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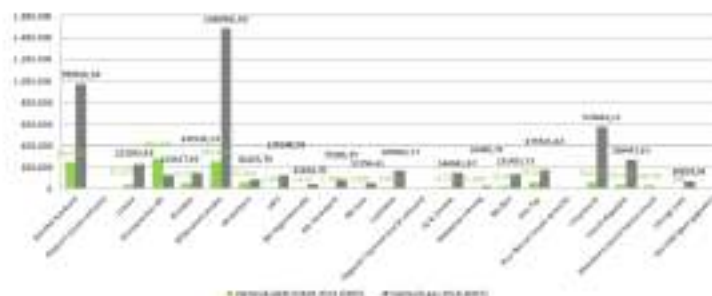
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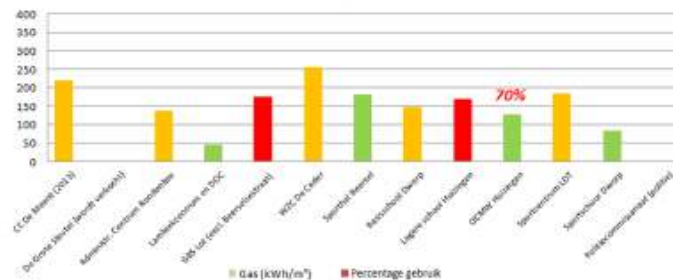
Workshop "EPC feasibility" + reporting

Result: Evaluation on the feasibility for EPC for the building heritage

Energieverbruik 2014 (kWh)



Gas - werkelijkheid 2014 (kWh/m² ~% gebruik)



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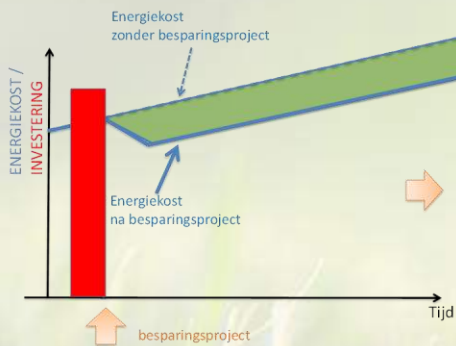
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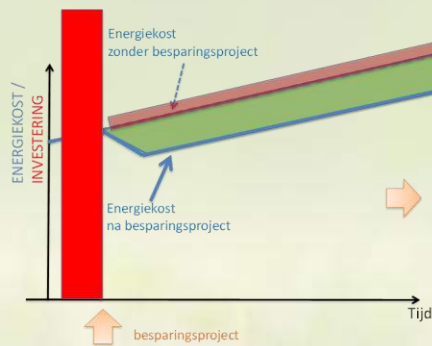
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EPC-facilitation kick-off

Determine ambition level and scope of the project. Start-up EPC-project: assist the municipality to appoint a EPC-facilitator.



Typische EPC-toepassing



- CR-EPC
(Comprehensive
Refurbishment)
OF
-Langere EPC

VERVOLG EPC COACHING TRAJEKT

1. Goedkeuring scope van de gebouwspols en ambitieniveau EPC
2. Principeakkoord bekrachtigd door schepencollege om facilitator aan te stellen
3. Aanleveren typebestek EPC facilitator door Steunpunt DUBO en goedkeuring door college
4. Aanbesteding EPC facilitatie: publicatie
5. Aanstellen EPC Facilitator
6. Aanbesteding ESCO en aanstellen ESCO



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Regional clusters of municipalities



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What is the status now?

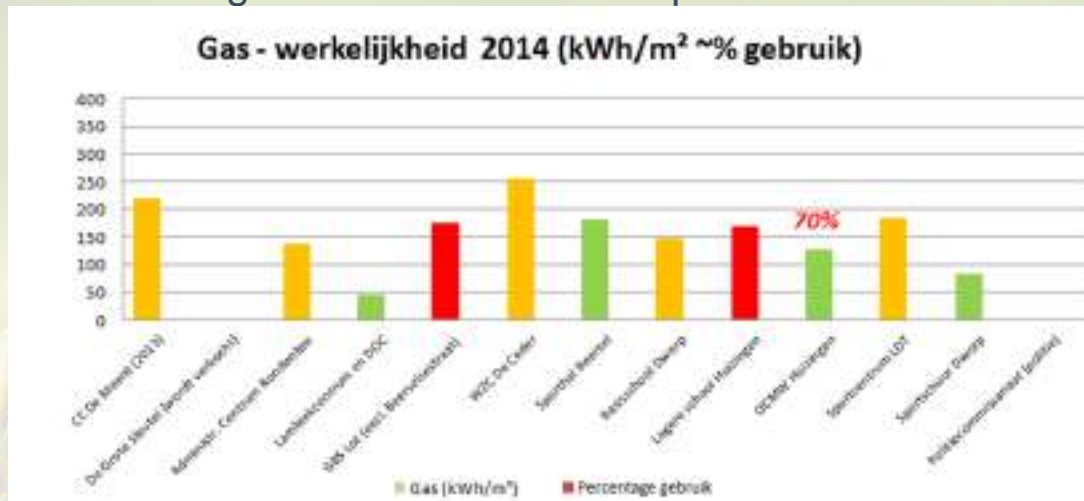
- **9 municipalities already started** with the coaching trajectory. The start-up period is not specified and can be on different start-up moment during the project period.
 - Step 1 Training: **Asse**
 - Step 2 Data Inventarisation:
 - Step 3 JAM-Session : **Londerzeel, Meise, Bertem, Lubbeek**
 - Step 4 EPC Kick-off: **Beersel, Sint-Pieters-Leeuw**

Two municipalities decides to implement the energy efficiency measures bu themselves: **Halle, Oud-Heverlee**
- ***Start up new coachings in January 2016***



Building Pool Beersel

- Total building heritage of 11 buildings
 > 7 buildings selected in the EPC-pool



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Overview scope EPC-Pool Beersel

Overview EPC scenario							
Type EPC		Gegevens energieverbruik en -kost		Investering (€)	Besparing t.o.v. baseline (% / jaar)	Besparing t.o.v. baseline (€/ jaar)	TVT (jaar)
		totaal verbruik kWh	totale energiekost (€/j)				
1.	EPC Maintenance anq Quick Wins	581624	€ 57.237	€8.694 - €26.083	15%	€ 13.042	0,67 - 2
2.	EPC Techniques	3272924	€ 296.675	€496.559	25%	€ 82.760	6
3.	Comprehensive Refurbishment (CR) – EPC (Isolating roofs, upgrade windows)	1216827	€ 90.888	€254.361€ - €339.148	30%	€ 16.957	15 - 20
Totaal		5298944	€ 474.508		24%		

Rule of thumbs: 24 % in the selected pool, 17 % in relation to the total building pool



Building Pool Sint-Pieters-Leeuw

- Total building heritage of more than 20 buildings , 8 buildings selected in the EPC-pool (baseline +/- € 15.000)

Energiekost 2014 voor de weerhouden gebouwen van het patrimonium					
<u>Gebouw</u>	Elek. 2014 (kWh)	gas 2014 (kWh)	kost/jaar	cumul	
1. PATRIMONIUM GEMEENTE					
Wildersportcomplex	249.212	1.480.007	€ 91.751	€ 91.751	
Sporthal Ruisbroek	243.998	969.011	€ 75.430	€ 167.180	
Gemeentehuis SPL	280.388	123.618	€ 56.982	€ 224.163	
Den Top	59.337	175.922	€ 16.552	€ 240.714	
Merselborre	56.962	82.426	€ 13.295	€ 254.010	
Coloma	31.677	223.264	€ 12.717	€ 266.726	
TOTAAL GEMEENTE	921.574	3.054.247	€ 266.726	€ 266.726	
2. PATRIMONIUM OCMW					
OCMW: Zilverlinde	695.700	1.175.237	€ 104.827	€ 104.827	
OCMW: 't Paveljoentje en Van Parys	68.826	197.129	€ 12.796	€ 117.624	
TOTAAL OCMW	764.526	1.372.366	€117.624	€117.624	
TOTAAL GEMEENTE EN OCMW	1.686.100	4.426.613	€384.350	€384.350	



Overview scope EPC-Pool Sint-Pieters-Leeuw

Overview EPC scenarios

<u>Type EPC</u>		Gegevens energieverbruik en -kost		Investering (€)	Besparing (% / jaar)	Besparing (€/ jaar)	TVT (jaar)
		totaal verbruik kWh	totale energiekost (€/j)				
1.	EPC Maintenance and Quick Wins	1.044.607	€ 99.626	€ 9.963 – € 29.888	15%	€ 14.944	0,67 - 2
2.	EPC Techniques	5.068.106	€ 284.724	€ 427.086	25%	€ 71.181	6
Totaal		6.112.713	€ 384.350		22%		

Rule of thumbs: 22 % in the selected pool, 17 % in relation to the total building pool



Questions?

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