

One-Stop shops in the EU: current and future role in building renovation

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The framework in Piemonte

- More than 1.000 Municipalities, by which nearly 90% with less than 5.000 inhabitants
- The estimation of energy consumption in the public sector in Piemonte is about 267 ktoe, by which 200 ktoe for heating and hot water production and 67 ktoe of electricity
- The public sector is 6% of the whole civil sector and 3% of the overall final energy consumption in the Region
- The regional target to 2030 is to envisage an energy reduction of about 90 ktoe, about 10% of the overall energy consumption reduction in the Region

How to stimulate savings in that 90% of Municipalities?

Barriers to tackle

- Lack of technical skills
- Lack of time to increase specialization in energy efficiency
- Limited access to the opportunities offered by innovation
- Limited capacity to assess ESCO proposals
- Scale factor (investments are too small)
- Limited skills and time to disseminate good practices

What kind of solutions?

- Innovation
- “One-stop shop” approach
- Aggregation of demand

Investments in energy efficiency

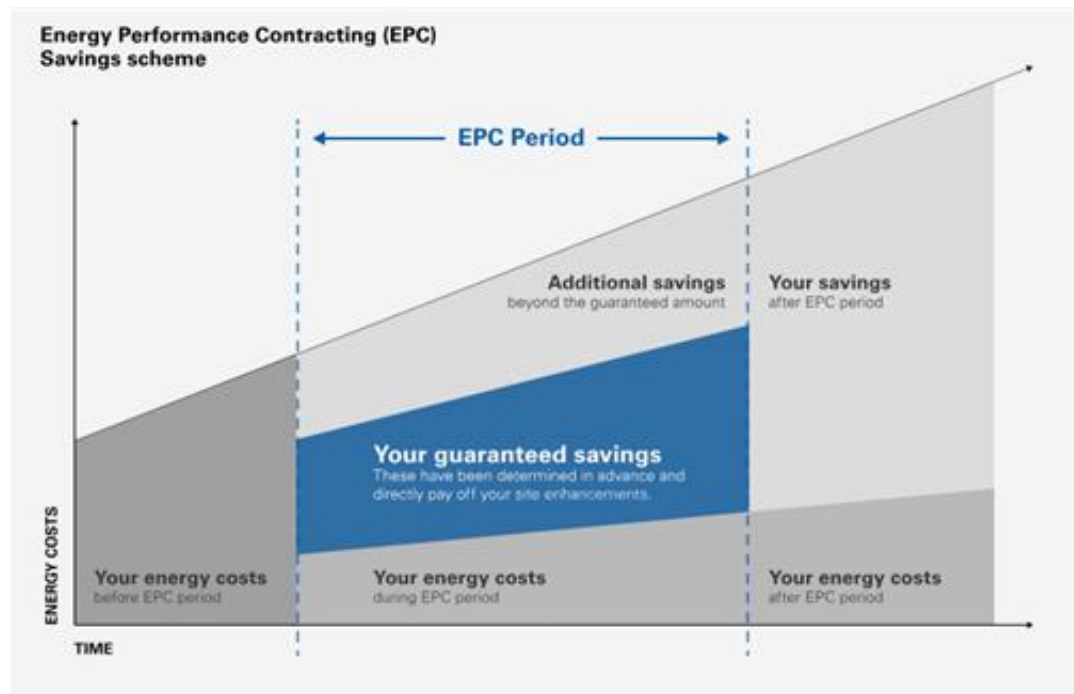
Investments in energy efficiency
Energy Management



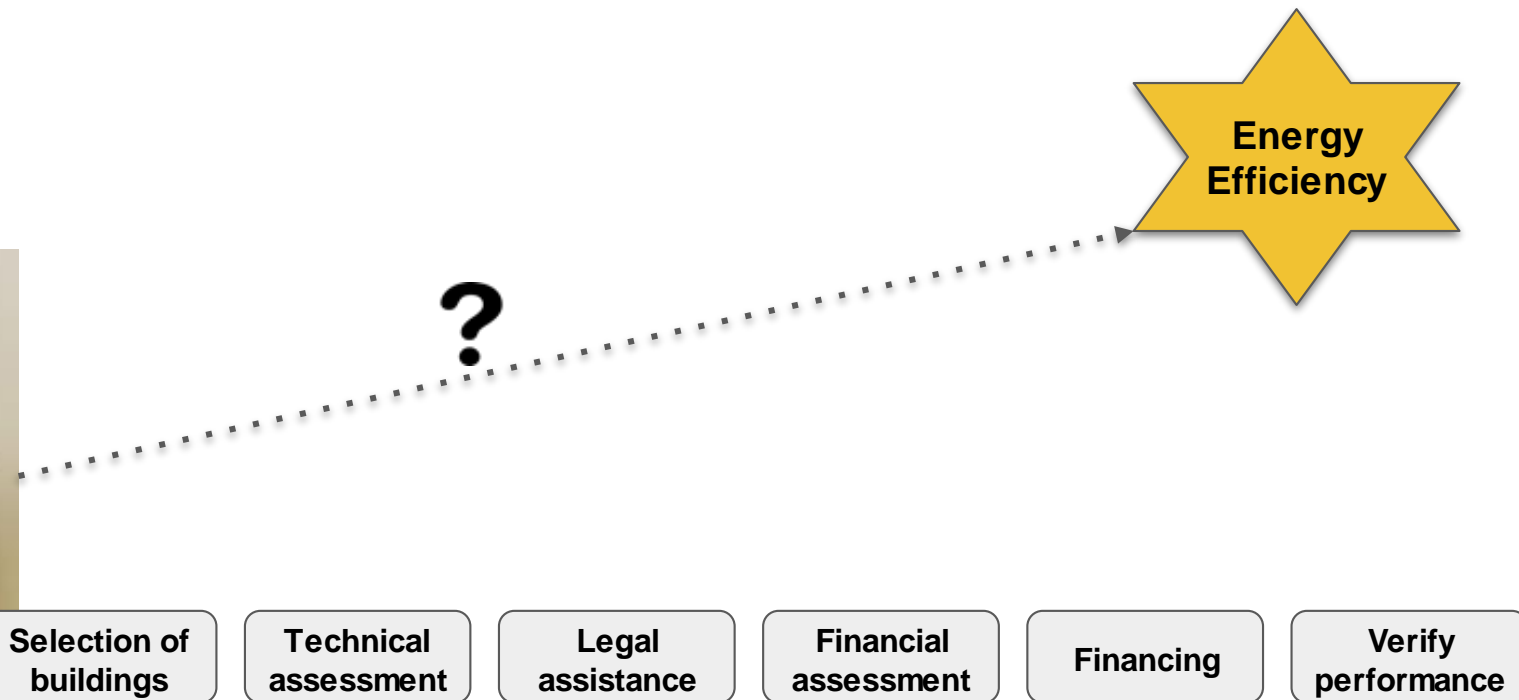
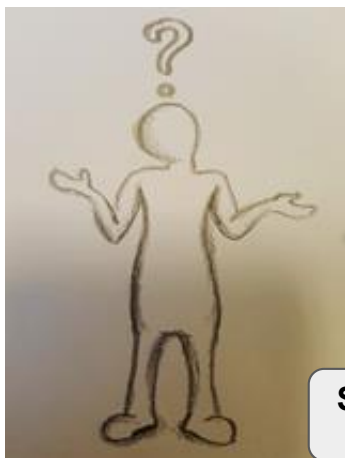
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Innovation

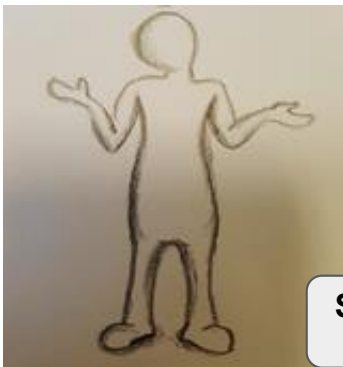
- Energy Performance Contract
- Coordination and support for Project Development Assistance



“One-stop-shop” approach



“One-stop-shop” approach



Aggregation of demand

Municipality 1



Municipality 2



Municipality 3



Municipality 4



Bundling

Investment Plan
preparation



Joint
procurement



ESCO

Technical
Assistance

Legal
assistance

Coordination

What	Investment (M€)	Project
18 buildings belonging to 5 Municipalities	2.5	2020Together
3.000 street light points belonging to 6 Municipalities	2.5	2020Together
3 buildings belonging to 1 Municipality	0.5	PEACE_Alps
9.000 street light points belonging to 6 Municipalities	6.5	PEACE_Alps
53 buildings belonging to 24 Municipalities (4 different bundlings)	2.0	STEPPING
Total	14 M€	

Concluded....

Concluded....

Prepared....

Prepared....

In preparation.....



Example 1- Bundling of street lights

What: Energy refurbishment of street light systems of 6 Municipalities (3.000 light points, 2.823 of which to be replaced), without energy supply.

How: EPC with a duration of 13 years (1 for investments and 12 for management).

Guaranteed saving: 68,35% with shared savings in the case of over-performance (70-30). Cost savings of about 11,6% in average

Investments: 2.4 M€ + VAT – NPV: 400k€ - IRR:10% -
PAYBACK:7

Example 2 - Bundling of buildings



What: energy renovation of 18 public buildings with fuel supply and energy management

How: EPC with 13 years of duration (1 year for investments + 12 years for management)

Who: 5 Municipalities, the Metropolitan City of Torino and Bosch Energy and Solutions Italy

Guaranteed savings: **61%** with shared savings in case of over-performance (70-30)

Investments: 2.5 M€ + VAT

First year: about **28%** of savings only due to a better management



Gli edifici selezionati



The nZEB Building

Scuola primaria Marinella in provincia di Torino PIEMONTE

Luogo	Bruino (TO)
Zona Climatica	E
Tipo intervento NZEB	Riqualificazione
Anno di costruzione	1973
Destinazione d'uso	Scolastica
Numero piani	2 fuori terra + 1 seminterrato
Superficie	620 m ²
Fonte dei dati	Città metropolitana di Torino Progettista - Sinea Ingegneria ESCO – Bosch Energy and Building Solutions Italy



La “Scuola primaria Marinella” è stata riqualificata nell’ambito del progetto europeo 2020Together, Programma Energia Intelligente Europa. Gli interventi per la riqualificazione di questo edificio scolastico sono stati la coibentazione della muratura esterna e del sottotetto, l’installazione di serramenti in PVC a taglio termico, l’installazione di una pompa di calore aria-acqua, di valvole termostatiche programmabili, di un sistema di telegestione e infine di impianto fotovoltaico di tipo grid-connected.

EP₀ (kWh/m ² a)	35,45
EP_{0,max} kWh/(m ² a)	26,73
Copertura da rinnovabili %	67,4
Classe energetica	A4 - nZEB
FABBRICATO	
Rapporto di Forma S/V	0,5364
EP_{h,inf} (kWh/(m ² a))	28,5
EP_{C,inf} (kWh/(m ² a))	23,10
H₁'_{zona 1} (W/m ² K)	0,29
H₁'_{zona 2} (W/m ² K)	0,46
H₁'_{zona 3} (W/m ² K)	0,39
H₁'_{zona 4} (W/m ² K)	0,23
A_{tot,inf}/A_{tot,op,inf}	0,0165
Tecnologie involucro opaco:	
Pareti: coibentazione a cappotto con pannelli di EPS con grafito 140 mm di spessore	
Copertura: coibentazione del tetto con doppi pannelli di lana di vetro ad alta densità da 100 + 80 mm.	
U – involucro opaco (W/m²K)	U_{par} = 0,17 U_{sup} = 0,187
Tecnologie involucro trasparente:	
Serramenti in PVC a taglio termico	
Vetro doppio bassoemissivo	
U – inv. trasparente (W/m²K)	U_g = 1,3 U_g = 1,1

IMPIANTI	
Impianto climatizzazione invernale	
Tipologia	Pompa di calore aria-acqua
Note	Potenza nominale (+7°C) = 50,2 kW COP = 4,15
Impianto climatizzazione estiva	
Tipologia	
Note	
Impianto acqua calda sanitaria	
Tipologia	Pompa di calore aria-acqua
Note	Accumulo termico
Sistema di regolazione e telegestione	
Valvole termostatiche programmabili sui radiatori esistenti. Controllori logici programmabili (DDC). Sistema di telecontrollo remoto.	
Impianto fotovoltaico	
Superficie (m²)	68,33
Potenza installata	10,92 kW picco

Committente: Pubblico
Lavori terminati nel 2018
Progettista: Sinea Ingegneria
ESCO: Bosch Energy and Building Solutions Italy
Impresa di costruzione: Seep BO
Costo unitario: 280 €/m² (superficie lorda)
Finanziamenti/incentivi: Progetto Europeo IEE «2020TOGETHER»
Riferimenti:

Final remarks after few years of experience

- There is still the need of **standardization** (procedures, tender documents, approaches....).... but good progresses done!
- **Time** is an issue. The preparation and decision process is still too long. The engagement of beneficiaries is a crucial step, but it is not only a matter of procedures..... it's more a matter of people. **Coordination** cannot be skipped, but it's not a guarantee of success.
- **Technical support** is essential. Is it time for introducing it in the core mission of regional public authorities?

At least 500 protests are planned for 15 March



Europe and the Middle East
351 strikes

There will be 33
events in the UK



We were waiting for students for long....
now, I feel that policy makers at local level are less in the
topic than in the past years

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