

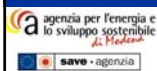
PU-BENEFS project

Mobilising the energy saving potentials in local authorities
How to put into practice energy efficiency services?

June 20th, 2007 – Brussels

Energy Efficiency Services in Italy: how to overcome the obstacles

Marcello Antinucci
AESS Modena Director



Intelligent Energy  Europe

Opportunities for energy improvements in the public sector

- Measures on the envelope, including window and frame substitution, wall and roof insulation, ...
- Replacement with more efficient plants (condensing boilers, CHP, district heating, etc.)
- Measures on Public Lighting (substituting lamps, reducing glare (sky) pollution, light intensity control, monitoring, etc)
- RES application (PV, solar thermal, biomass, geothermal heat pumps)



Intelligent Energy  Europe

Local Authorities starting conditions

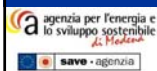
- Running costs for energy are increasing,
- Little financial availability for refurbishment investments and for RES use;
- Short of staff able to design and manage energy measures on estate, beyond the ordinary maintenance. Need of outsourcing the whole energy management.

The Energy Service national regulation (DPR 412/1993) for heating: a missed chance for TPF?

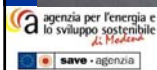
- State incentive: VAT from 20 to 10% for dwellings and schools. But:
- Bearish tenders (meaning high discounts and low quality service)
- Heat metered without any control, leading to increasing consumption and becoming an incentive to cost levitation;
- No investments from the service providers (why? Active ESCOs were maintenance companies!)

Province of Modena – A good practice

- Inspiration from the Cremona Province experience and from other European Countries
- Main goals: system refurbishment, keeping the expenditure stable and controlled, externalise service.
- There was a need to change the specifications, introducing new evaluation criteria.



Intelligent Energy  Europe



Intelligent Energy  Europe

The AESS role

- The Agency has in its main statute purposes the promotion of energy efficiency and the implementation of RES, first of all through assistance to its members (public authorities).
- Joining qualified technical skills and information/management experience, AESS meets pretty good the Local Authorities needs.



Intelligent Energy  Europe

What is AESS?

- The Energy and Sustainable Development Agency (AESS) was founded on March 30th 1999, on Modena Municipality initiative, in the framework of the EC SAVE Program;
- It has currently 18 members: Province and Chamber of Commerce of Modena, University of Modena and Reggio Emilia, other 7 Municipalities of the Modena province, Frignano Mountain Community, GEOVEST, AIMAG, SAT, ATCM, Legambiente, Consumers Italian Association.
- Main purpose of AESS is to provide Public Bodies, Enterprises and Citizens with services and information on energy saving and use of RES. 10 people work at the Agency, among them 8 graduated.



Intelligent Energy  Europe

The new contract features

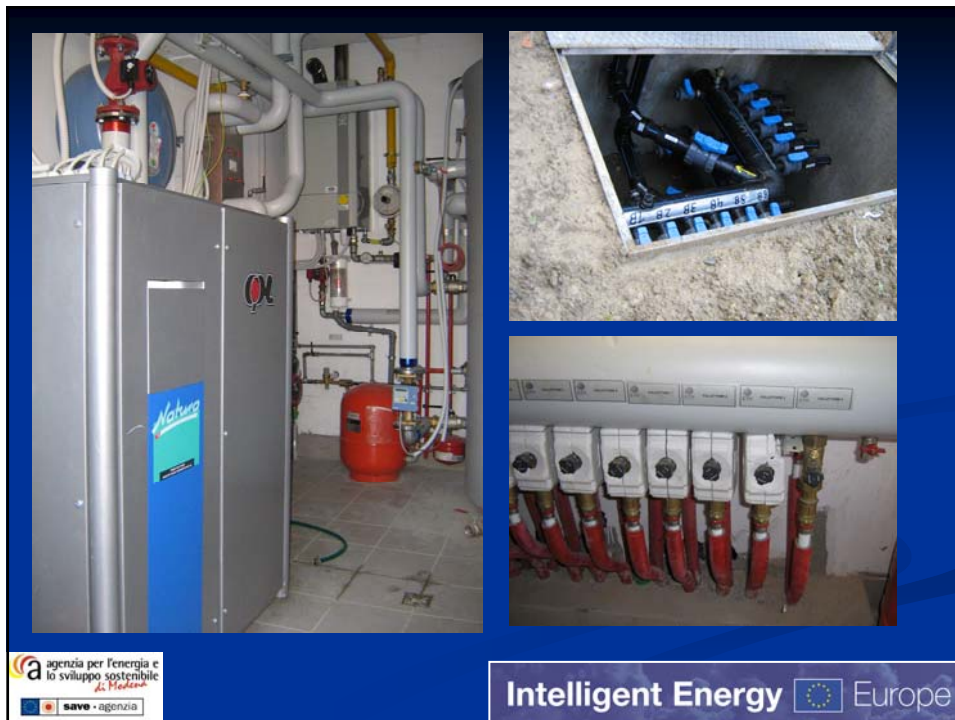
Common characteristics

- The Public Authority proposes the interventions.
- The tenderer decides which investment to propose and gets additional evaluation marks accordingly.
- Financing of the intervention by the ESCO, with the foreseen yearly saving due to the proposed interventions deduced from the yearly fixed amount (=guaranteed saving).
- The yearly amount is combined with a “sharing savings” incentive (mainly for rewarding improved consumer behavior).

The new contract features

Energy Service of the Modena Province

- The yearly amount is fixed (apart the fuel rates) but combined with the “sharing savings” incentive.
- Proposed investments where in condensation boilers, boiler regulations, building automation (lighting and heat control), geothermal heat pumps, remote control and management.
- The service was limited to heating and hot water.



The new contract features

Energy Service of Formigine Municipality

- Strong investments not only on boilers but also on RES: solar thermal, PV.
- Sport plants part of the contract.
- Measures on sport premises: condensing systems for water and air heating (pressurised balloons) and solar hot water in gymnasiums.



The new contract features

Energy Service of Budrio Municipality

- Meter-based invoices instead of fixed (according to the VAT regulations)
- Heating and electricity supply
- Investments on boilers, solar thermal, building automation for lights, biomass and building insulation.
- Discount on the interest rate offered in the contract
- Flat part in the tariff (max25% of total) as a disincentive to increase consumption.

Additional contract features

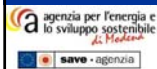
Energy Service in the Municipality of Savignano

- Heating, electricity in buildings and street lighting included
- Investments on boilers, solar thermal, building automation, buildings insulations, replacing Hg lamps, cutting light pollution, attenuation of night light intensity, remote control on every light spot;
- The yearly amount in installments of investment expenditures exceeds the gained savings: the Municipality invests for the future generations;
- Running energy expenditure is halved: benefit according to the State limitations on local budgets.

Energy Services in preparation



- **Energy Service Geovest**
 - 11 Municipalities joining for 1 common tender concerning electricity + heating. Investments on: heating, electricity, CHP.



save • agenzia

Intelligent Energy  Europe

RESULTS

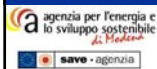


save • agenzia

Intelligent Energy  Europe

PROVINCE OF MODENA CONTRACT SPECs

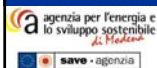
Baseline for tenders	14.901.135,00 €
Number of Boiler houses	30
Proposed n. of boiler houses replacement	7
Building automation in schools	1
Minimum foreseen energy saving	15%
Duration (years)	7
Remote control in every boiler house	
Installing of heating meters in every gymnasium for the separate measurement	



Intelligent Energy  Europe

Modena Province: call results

Offering Companies	10
Winner company	ATI CPL Concordia - Ferrari Impianti – GEFI
Offered discount	8,5 %
Further measures	
Boiler houses to be renovated	5
Geothermal heat pump system	1

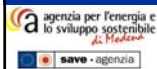


Intelligent Energy  Europe

Municipality of Formigine specs

Baseline	4.035.842,00 €
Number of Boiler houses	46
Proposed n. of boiler houses to be replaced	15
Minimum foreseen energy saving	20%
Duration (years)	9

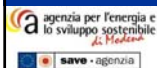
Remote control in every boiler house
Installing of heating meters in every gymnasium for the separate measurement



Intelligent Energy  Europe

Proposed additional interventions by technology

- Solar thermal hot water in gymnasiums
- Photovoltaic plants in schools
- Building automation in schools
- Absorption cooling
- Heat recovery from exhausted air
- Geothermal heat pumps
- Biomass boiler
- Solar shading devices on South-East-West façades.



Intelligent Energy  Europe

Call results

- Offering companies: 9
- Winner company: Manutencoop
- Offered discount: over 3%
- All proposed measure were offered
- Commitment on interventions in all proposed technology, except biomass.



Intelligent Energy  Europe

Municipality of Budrio specs

Baseline	3.575.580,33 €
Number of Boiler houses	17
Proposed n. of boiler houses to be replaced	4
Minimum foreseen energy saving	16%
Duration (years)	9

Remote control in every boiler house and use of existing heating meters



Intelligent Energy  Europe

Municipality of Budrio: call results

- **Offering companies: 2**
- **Winner company: CPL Concordia**
- **Offered discount: 3%**
- **Every suggested measure been selected**
- **Among the additional requested measures, a biomass boiler, info campaigns and a supplementary boiler substitution.**



Intelligent Energy  Europe

What did we learn?

- **Market is ready for such contracts (but controlled by multi-services companies)**
- **The contract modifications are able to mobilise investments and savings.**
- **Municipalities get benefits, not only energy-ones (reduced running expenditure and investment payment distributed in time, better service, energy accounting)**
- **The payment based on actual supply can be controlled through appropriate rules.**



Intelligent Energy  Europe

What did we learn?

- the “sharing savings” scheme is a good first step in order to make service provider and users aware on saving, but it must be combined with school campaigns and with user-addressed info campaigns .
- Control and management tasks on the contract are demanding (external assistance could be essential). This means a little extra cost.

The PU-BENEFS project's support

1. **Combining an Energy Supply /Facility Contract** (meter-based payment) with the basic elements of an **Energy Performance Contract**, aiming to identify an energy saving potential, achievable through measures both of technical content and related to user behaviour.

The PU-BENEFS project's support

2. Reducing the Supply Contract's faults

- Replace a unique tariff (directly proportional to the measured heat), with a multiple one, composed of:
- 3 fixed quotas, covering ordinary and extraordinary maintenance costs and investment rate.
- A variable quota related to the energy consumption
- → this way the interest of the service company to let the consumption increase is reduced, as on this increase there are not relevant profit margins.

The PU-BENEFS project's support

- ### 3. Remove, whenever possible, the final consumption controls from the service company and commit it to the users.
- Use of thermostatic valves on radiators;
 - Launching of communication and education initiatives (schools);
 - Make the service provider aware and interested on saving.

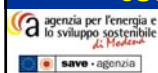
The PU-BENEFS project's support:
Feasibility studies on new projects

1. Street Lighting Management - San Giovanni in Persiceto – extended to other 10 Municipalities

tender fall 2007 – winter 2008

2. Hospital - New Energy Service including a CHP plant - University Hospital of Modena –

tender probably 2008



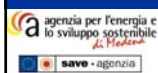
Intelligent Energy  Europe

The PU-BENEFS project's support:
Future feasibility studies

1. Street Lighting Management – Comunità Montana del Frignano – **Feasibility study already committed.**

2. Building energy study - Pavullo Municipality

Preliminary feasibility study already committed.



Intelligent Energy  Europe

Thanks for your attention!

www.aess-modena.it

mantinucci@aess-modena.it

Tel 059 407122

