

**GPP
2020**

procurement
for a low-carbon
economy



Boosting Sustainable Energy Supply & Efficiency through Smart Public Tendering

Energy efficiency through performance contracting in Catalonia

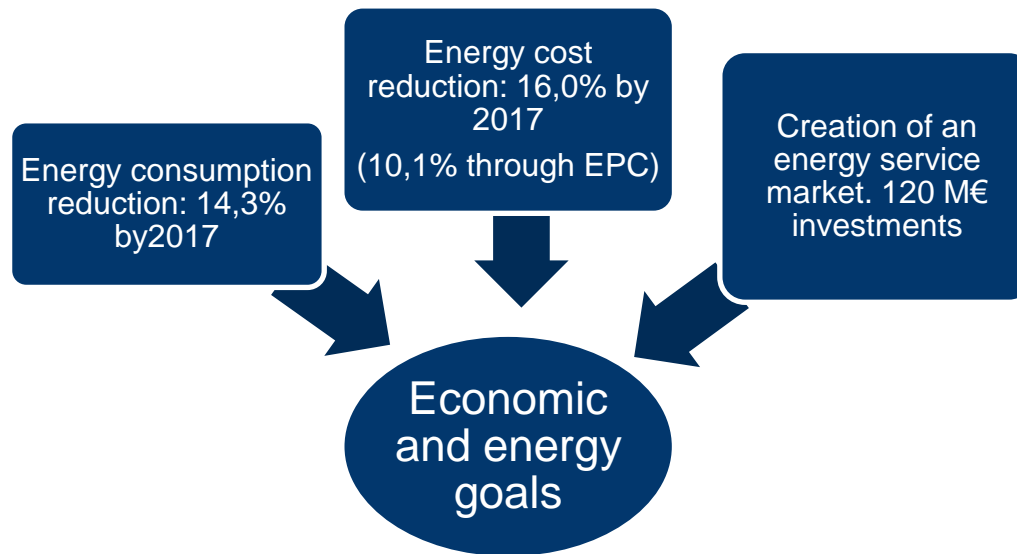
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ENERGY Plan

On August 30th of 2011 the Government of Catalonia approved the first **Energy Efficiency and Savings Plan for Public Buildings (2011-2014)**.

Targets of this Plan have recently been updated (2015-2017).



ENERGY Plan

Action Plan contents: two phases developed at same time:

Phase 1 (Energy Supply Review).

- Optimize conditions of **Energy supply** for all Public Buildings, in order to reduce power and obtain best prize with Utility companies (electricity and natural gas).

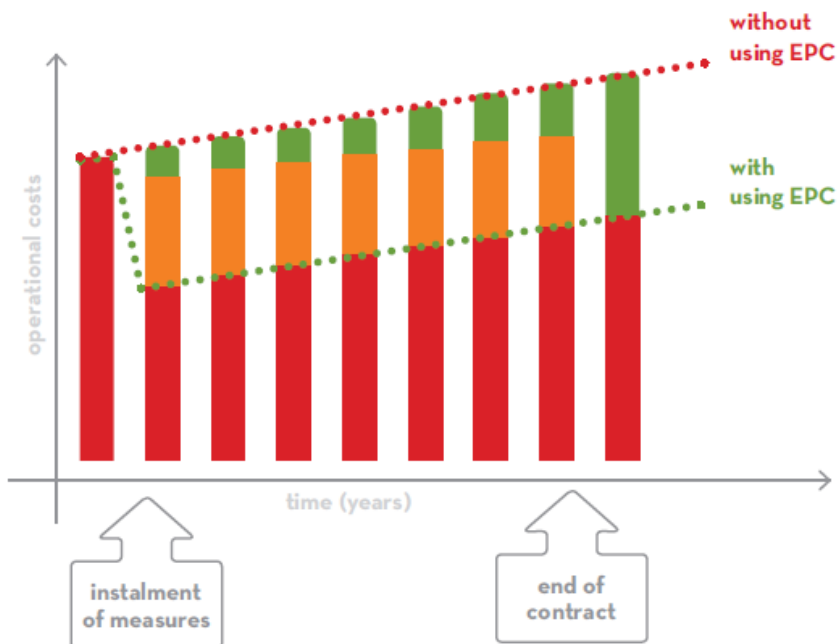
Phase 2 (Efficiency).

- Develop a program of Good Practices and an **Investment program** (under Energy Performance Contracting model).



What EPC is

A model for implementing energy efficiency measures with guaranteed results.



- benefit to customer
- guaranteed savings (as volume of investment)
- operational costs
- + ■ = savings

EPC models

EPC investment projects

“Light” EPC: energy management



EPC models - EPC investment projects

- Estimated energy saving: 28%.
- Contract length: 7 to 10 years.
- Contract typology adapted: a service contract under special administrative nature:
 - service contract: it does not count as a debt.
 - allows to reach periods up to 10 years or more (instead of the 4+2 years of a service contract).
- Guaranteed energy savings.
- No energy supply.
- Tendering together energy efficiency and maintenance services.
- Energy audit establishes no binding measures.
- The ESCO proposes the measures in its offer.
- The measures are proposed, executed and financed by the ESCO.



Terms of **CONTRACT**: administrative and technical sheets

The winning ESCO will perform the following services:

A. Energy Efficiency Service:

- Actions in energy conservation Service:

The awarded ESCO has to implement and/or update the tendered facilities with the improvement and renovation of systems and equipment with the proposed measures: the called Energy Conservation Measures (ECM), once the contract is signed.

- Technical management and Measurement and Verification Service:

The awarded ESCO will conduct the technical and energy management and all actions in order to measure the performance of facility, in compliance with the technical clauses of the signed contract.

B. Maintenance Service:

Awarded ESCO will conduct preventive, standard and whole facility maintenance in order to achieve the best performance of facilities under the contract and of all of their components, as agreed and signed in the EPC contract.



Graphic presentation of PROVISIONS

The maximum price of the contract is the sum of the efficiency and maintenance fees.

Efficiency Fee:

$$Q_{Ef} = Q_{AM} + Q_{GT} + Q_{MiV}$$

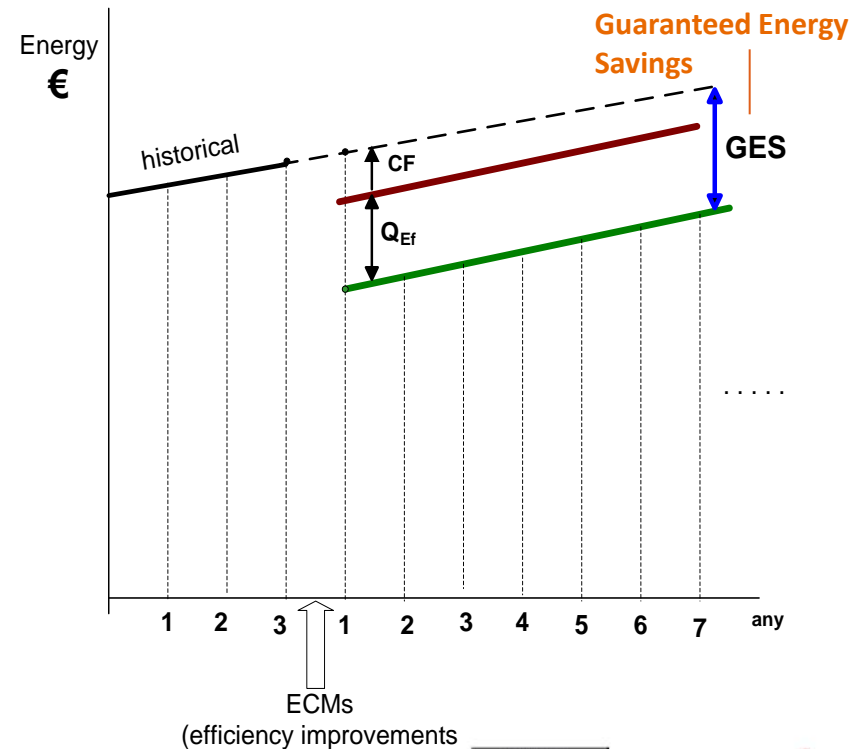
Amortization of
Improvements

Technical
Management

Mesure &
Verification

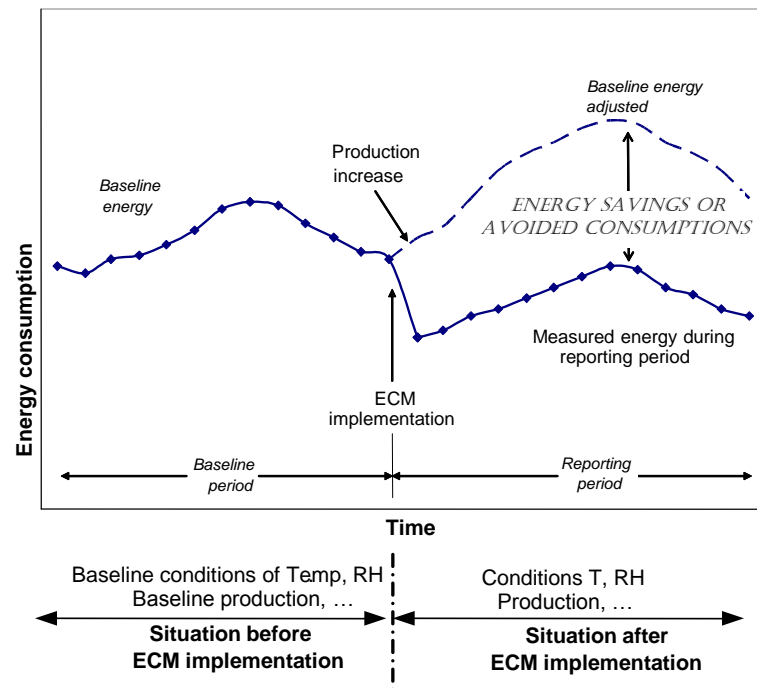
Total Fee:

$$Q_T = Q_{Ef} + Q_M$$



Savings FOLLOW UP and PENALTIES

1. Each tenderer has to present a Measurement and Verification plan adherent to the IPMVP (International Performance Measurement and Verification Protocol). According to the Plan, savings will be **verified each year** at the end of each annual period.
2. If verified cumulative savings are under guaranteed savings, **penalty** will be applied:
 - If **savings are between 75% and 99%** of guaranteed value, penalty is: not saved kWh x current price €/kWh
 - If **savings are under 75%**, penalty will be as the former, but multiplied by a factor of 1,5.
3. This value will be subtracted each month to the efficiency Fee in the following year (distributed in the next 12 months: penalty/12).



ENERGY EFFICIENCY AND MAINTENANCE SERVICE at Catalan Institute of Oncology



Results

	CO ₂ emissions (t CO ₂ /year)	Energy consumption (toe/year)
With energy efficiency service	3,482	1,280
Without energy efficiency service	4,620	1,703
Savings	1,138 (25%)	423 (25%)

http://www.gpp2020.eu/fileadmin/files/Tender_Models/GPP_2020_tender_model_EPC_ICO_Catalunya_2015.pdf



EPC models - “Light” EPC: energy management

- Estimated energy saving: 15%.
- Contract length: 4 years.
- Shared energy savings (between 10% and 40%).
- Measures: monitoring, control and management of energy use.
- Contract typology: service.
- Separate or together with maintenance.
- Simplified preliminary diagnosis.



ENERGY MANAGEMENT

1. Adapt the energy consumptions to the needs.
2. Optimize equipments operation.

Implementation of energy management:

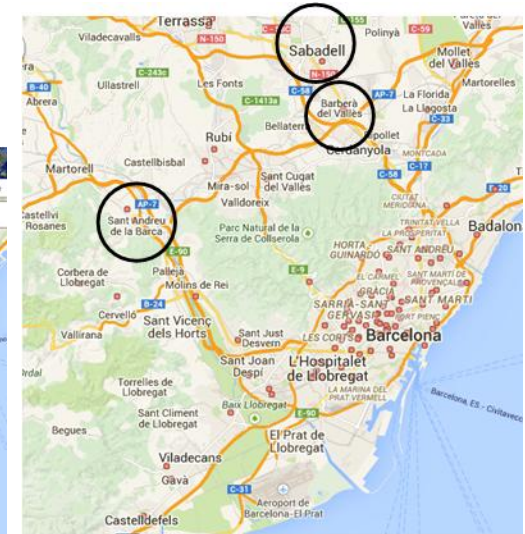
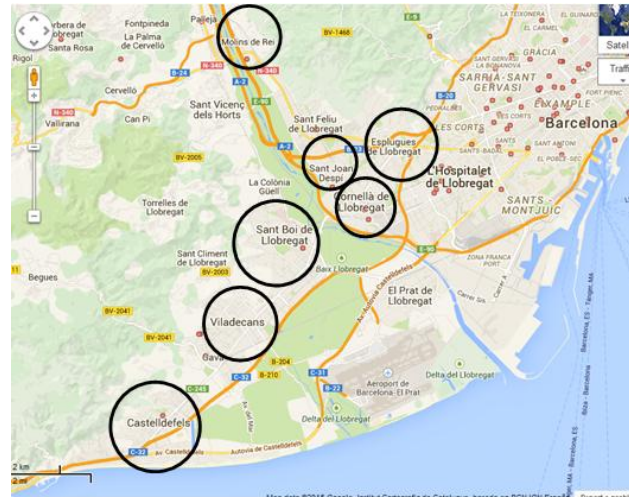
- a) Internal
- b) In collaboration with external consultancy
- c) “Light” EPC – energy management service through ESCO

The technical and management complexities require **expert and specialized knowledge.**



EPC “light” in a pool of 12 HIGH SCHOOLS. Ministry of Education. Government of Catalonia

High School	Town
IES Rafael Casanova	Sant Boi Ll.
IES Mariano	Sant Boi Ll.
IES Bernat de Ferrer	Molins de Rei
IES el Palau	S. Andreu Barca
IES Severo Ochoa	Esplugues Ll.
IES La Mallola	Esplugues Ll.
IES Miquel Martí Pol	Cornellà de Ll.
IES Mediterrània	Castelldefels
IES La Romànica	Barberà del V.
IES Torre Roja	Viladecans
IES F. Ferrer in Guàrdia	Sant Joan Despí
IES Sabadell	Sabadell



**High interest for this contracting model:
15 offers**



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