



Energy efficiency and maintenance service

Catalan Institute of Oncology. Ministry of Health. Government of Catalonia

- Energy performance contract (EPC) with guaranteed energy savings
- Four years contract with a minimum of 16% in energy cost reduction



Copyright Catalan Institute of Oncology. Ministry of Health. Government of Catalonia

Standard product

- There wasn't an EPC with guaranteed energy savings
- Energy consumption and CO₂ emissions:
 - 1.703 toe/year
 - 4.620 t CO₂/year

GPP 2020 tender

- EPC with guaranteed energy savings (23 %)
- Energy consumption and CO₂ emissions:
 - 1.280 toe/year
 - 3.482 t CO₂/year

Results

Energy savings

- 423 toe/year
- 1 573 toe/contract (4 years)

CO₂-savings

- 1.138 t CO₂/year
- 4.225 t CO₂/contract

Contract tendered

- The Catalan Institute of Oncology, from the Ministry of Health of the Government of Catalonia, tendered the energy efficiency and maintenance service.
- The tender is under the Energy Performance Contract (EPC) model, with guaranteed energy savings. Mandatory minimum of 16% in energy cost reduction and 10% in water cost reduction has been included.
- The contract length is 4 years, with an optional 2 years extension.
- The contract value is 3,380,467 € (VAT excluded) for the first 4 years, plus 1,690,234 € (VAT excluded) for the optional 2 years extension.
- The tender is in the framework of the *Catalan Government buildings energy efficiency plan 2011-2014* and is aligned with the goals of the *Energy and climate change plan 2012-2020*, approved by the Government of Catalonia respectively on 30 August 2011 and 9 October 2012.



Procurement approach

Procedure used

Open. There have been a total of 6 bids.

Technical specifications

The purpose of the contract is divided into two major services:

- The provision of conduct, preventive, corrective and regulatory maintenance service in the building installations.
- The provision of energy efficiency service with energy saving guaranteed goals, including:
 - The Energy Conservation Measures (ECM's): improvements on existing or new installations that foster energy saving, energy efficiency and use of renewable energy.
 - The technical and energy management as well as the actions to measure the performance of the installations and for the measurement and verification of the guaranteed savings using the International Performance Measurement and Verification Protocol (IPMVP).

Actions include, among others, improvements in the field of HVAC (heating and cooling), the production of SHW, boilers, solar energy, lighting, irrigation, management and measurement as well as control of all these installations.

Taking 2013 energy consumption as the baseline, the following percentage of energy saving has to be achieved with the actions and measures proposed:

- 12% in electricity and gas and 10% in water during the first year of the contract.
- 16% in electricity and gas and 10% in water in the following years.

Award criteria

The award criteria are as follows:

A) Award criteria automatically measurable (65 points):

1. Economical criteria (55 points):

- Valuation of the maintenance service cost, throughout the contract duration (25 points).
- Valuation of the energy efficiency service, using net cash flow (total guaranteed economic saving for the Catalan Institute of Oncology), throughout the contract duration (25 points).
- Valuation of the maintenance materials included in the maintenance service (material franchise), throughout the contract duration (5 points).

2. Technical criteria for the energy efficiency service evaluation (10 points):

- Valuation of the energy savings higher than the minimum established objectives (8 points).
- Valuation of the water savings higher than the minimum established objectives (2 points).

B) Award criteria evaluable through a qualitative assessment (35 points):

1. Criteria for the maintenance service (20 points):

- Maintenance project (13 points).
- Quality control procedures (2 points).
- Maintenance team (4 points).
- Transition service plan (1 point).

2. Criteria on the proposed ECM's (15 points):

- Coherent, technical and economical feasibility of the proposed ECM's (4 points).
- ECM's implementation timetable (2 points).
- Adaptation of the ECM's to the real needs and characteristics (4 points).
- Level of detail, justification and coherence of the technical proposed solution (5 points).

Contract clauses

Energy savings remuneration

The contract falls under a model of energy performance contract with guaranteed and shared savings. The savings achieved have to be used:

- to remunerate the ESCO for the energy efficient management and

- to obtain a real, direct and guaranteed energy expenditure saving for the Catalan Institute of Oncology.

Penalties

The penalties for the contractor for not achieving the total guaranteed saving are:

- If the achieved savings are between the 80% and the 99% of the guaranteed savings, the penalty will be the corresponding to the 50% of the cost for the Catalan Institute of Oncology of the not saved energy.
- If the achieved savings are between the 50% and the 79% of the guaranteed savings, the penalty will be the corresponding to the cost for the Catalan Institute of Oncology of the not saved energy.
- If the achieved savings are under the 50% of the guaranteed savings, this will cause the termination of the contract, without the right to recoup the investments made.



Measurement and verification plan

The bidding companies have to present and, where appropriate, execute a measurement and verification plan. This has to be done for each of the proposed actions, using the International Performance Measurement and Verification Protocol (IPMVP) EVO 10000 – 1:2010.

Contract monitoring

For the right contract monitoring it is important that the awarded company implements all the necessary equipment (sensors, meters, etc.) that allow the identification of the possibilities of improvement, as well as properly monitoring energy consumption comfort conditions and correctly verifying the achieved savings.

A monthly monitoring report will be submitted. It will include, among other, the following information:

- Evolution (in detail) of the ECM's implementation.
- Real and global monthly consumption for each energy source and water.
- Real monthly savings for each energy source and water.
- Real monthly economic saving.
- A consumption monitoring for each ECM implemented will be done, in order to verify the guaranteed savings.

Criteria development

The actions and procedures for measuring and controlling proposed by the bidder are based on the recommendations of the energy audit carried out previously and annexed to the technical specifications.

The recommendations made in the audit do not have the character of a "closed list" and the bidders can propose other measures that would deem appropriate (technically and legally possible). The building energy consumption in 2013 has been taken as baseline to calculate the energy saving minimum requirements. Once the tender documentation was

published and before handing in their offers, the ESCO companies have been able to make a visit to the building and its installations.

The standard tender specifications for energy efficiency services of the Catalan Government buildings has been further worked on with the stakeholders of the energy services market. The aim was to obtain a successful tender specification model and give confidence to the market, that is still immature in Catalonia.

Results

The following results were achieved:



5

	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	423

Calculation basis

- The energy consumption in 2013 is used as baseline to calculate the energy savings per year.
- The guaranteed energy consumption savings (23%) is obtained from the winning bid.
- The annual energy savings have been calculated from the foreseen savings from the second contract year (4,923,567 kWh - 423 toe). From this savings, 3,150,338 kWh (271 toe) corresponds to electricity and 1,773,229 kWh (152 toe) to natural gas.
- The CO₂ emission reductions have been calculated using the following conversion factors (source: The Catalan Office for Climate Change – Government of Catalonia):
 - Electricity: 248 g CO₂/kWh (peninsular mix for 2013).
 - Natural gas: 201 g CO₂/kWh.
- It is foreseen a saving in the water and energy cost in the building, during the first 4 contract years, of 22.46%, equivalent to 1,799,724 Euros.

Lessons learned

The realization of this tender has allowed continuing working in this strategic action line of the Government of Catalonia, learning different aspects that will help to improve the tender specifications of future projects:

- The importance of the right definition of the current consumptions of the building and its daily energetic behaviour, knowing the hours of higher consumption and the reasons, what are the installations that represent the higher percentage of the energy consumption, etc.
- How to define the energy efficiency fee from the guaranteed energy savings.
- Which are the most important criteria to evaluate the bids.
- How to define measurement and verification protocol in order to check annual savings.
- Contributing to standard tender specification for EPC in the hospital sector.



Contact

Catalan Institute for Energy
Government of Catalonia

icaen.gencat.cat | Francesc Vidal: francesc.vidal@gencat.cat

About GPP 2020



procurement
for a low-carbon
economy

GPP 2020 aims to mainstream low-carbon procurement across Europe in support of the EU's goals to achieve a 20% reduction in greenhouse gas emissions, a 20% increase in the share of renewable energy and a 20% increase in energy efficiency by 2020.

To this end, GPP 2020 will implement more than 100 low-carbon tenders, which will directly result in substantial CO₂ savings. Moreover, GPP 2020 is running a capacity building programme that includes trainings and exchange.
– www.gpp2020.eu

About PRIMES



PRIMES
Green Public Procurement

Across six countries in Europe; Denmark, Sweden, Latvia, Croatia, France and Italy, PRIMES project seeks to help municipalities overcome barriers in GPP processes, many of which lack capacity and knowledge.

PRIMES aims to develop basic skills and provide hands-on support for public purchasing organizations in order to overcome barriers and implement Green

Public Purchasing. This will consequently result in energy savings and CO₂ reductions. – www.primes-eu.net



Co-funded by the Intelligent Energy Europe Programme of the European Union

The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the EACI nor the European Commission are responsible for any use that may be made of the information contained therein.

