

Partner Questionnaire

1. How can EPC affect local level (SEAPs and other energy plans) and National level energy efficiency targets?

The building sector in Catalonia represents approximately the 30% of its total final energy consumption.

To this fact we have to add that in Catalonia more than the 60% of its buildings were built before 1980. Before the 80's it was not required the implementation of energy efficiency criteria in buildings. So there are a huge number of buildings where energy efficiency measures can be implemented as big savings potential exist.

The Catalan Government ('Generalitat'), is very interested in moving forward towards a more rational use of energy in buildings. In fact the Catalan government has been involved and committed since at least last 10 years promoting programs to save energy and optimize consumptions in public, residential and tertiary sectors.

There are certain barriers that hamper the improvement of energy efficiency in this sector:

- Prioritization of investment in aspects or elements that have more visibility for customers and users.
- Lack of knowledge and distrust of new technologies.
- Difficulty to obtain the necessary economical resources to carry out investment to improve facilities and buildings.

To overcome those barriers, the energy service companies (ESCOs) and the Energy Performance contracting (EPC) play a very important role. These companies contribute in supplying knowledge in new technologies and excellent building management to obtain the best performance that allows to achieve maximum savings. Besides those companies (at least in current conditions) provide the financial resources. Implementation of EPC, as a new contractual modality, allows implementation of facilities improvements without necessity of disposal of public money.

Public sector in Catalonia has an approximate consumption of 1.300GWh/year, with savings potential of 186GWh/year.

Unfortunately implementation of the EPC is very slow and with lots of difficulties as:

- to accept new contracting model that is totally ignored,
- new allocation criteria, as public debt,
- long lasting contracts, etc...

The sector where has been achieved the more significant results of energy services under EPC model, has been in public lighting, where about 8% of current facilities has been renovated through this model.

2. Discuss the most prevalent barriers you have experienced whilst implementing EPC in your region/city, organising your answers under the following headings:

- **Financial Barriers**

The first barrier we had to overcome was to make understandable to public bodies (Catalan Administration) that with EPC we can get a zero debt and at the same time use savings generated by this 'EPC service' to pay implemented improvements.

Second barrier to overcome was (and this is something still not 100% solved) the funding that ESCOs need to carry out investments. Financial institutions have to understand this kind of EPC projects, their feasibility and its guarantee of payment.

As the numbers of projects performed up to now are still few and the investment volume has a low significance, the funding obtained by companies is still using the conventional and "traditional" instruments, so financing is not still seen as a significant difficulty. Anyway small and medium sized ESCOs are beginning to suffer on their balance sheets the negative influence of investments. In a near future this fact might prevent a generalized deployment of EPC projects if nothing is done in regard to avoid this possible situation. That's the reason why is so important to keep on working on the definition of a financial model for the ESCo-EPC scheme.

- **Administrative Barriers**

At administrative level the main barrier to be solved was to define the set of tendering specifications documents being compatible with public contracting laws, without debt computed. This last point was solved by defining the contracts as "special administrative contracts" which allows enlarging duration of contract for which is necessary to demonstrate the viability of the project.

Is important to add that there is a lack of knowledge by responsible contracting administrative and by responsible for legal services that have a tendency to avoid this new contracts

- **Policy/regulation Barriers**

The main political barrier is to obtain a truly political commitment to improve the energy efficiency in public buildings and facilities.

To remove this barrier the Catalan Government (Generalitat de Catalunya) on august 30th 2011 approved the energy efficiency and savings plan 2011-2014 of application for all its buildings, willing of promoting investments in energy efficiency and basically focused under the EPC-energy services scheme. In order to keep on this initiative on June 16th 2015 it was approved and signed a revision and extension of the objectives of this Energy & Savings Plan with two main targets:

- 1) Reduce the energy invoice for the 2015-2017 period in 16% at 2017 compared to the energy invoice of 2014.
- 2) Reduce the energy use in 2015-2017 period in 14,3% compared to 2014 consumption.

Concerning to the regulations aspect it has to be under consideration the following tipologies and barriers:

- 1) It still hasn't been regulated the operation of ESCos regarding its rights and obligations. It still doesn't exist a company (ESCo) classification. This fact makes a difficult recruitment and the market follow up.
- 2) Regarding to the public debt and for which the last Eurostat note goes further, it has led to many local administrations to stop their projects based on EPC/ESCo model, this making the deployment of improvement of energy efficiency slowly.

- **Knowledge Barriers**

There are two main barriers concerning knowledge:

- 1) The responsible of public buildings have Ignorance on which new technologies exist and which are appearing to improve the state of buildings and their facilities, as for example building management technologies. There is no information on what existing programs exist for building management, and at the same time there is a lack of knowledge in the use of this software.
- 2) Lack of knowledge on management of building facilities, how to optimize its use to improve its efficiency, how to manage the energy demand of buildings to reduce it without loose comfort.

- **Other Barriers**

As a result of all described barriers, currently there are few projects implemented in buildings using EPC-ESCo scheme, so this makes difficult the implementation of new projects as this model is not known.

3. In relation to the barriers outlined, please suggest your preferred solution or policy recommendation.

Answer:

As mentioned to solve those barriers the 'Generalitat de Catalunya' opted for the energy service companies with EPC contracting, that allows to:

- 1) Make investments in improvement of energy efficiency in buildings without the need to provide public funding and without generating debt.
- 2) Available knowledge of recent technologies that exist in the market not only for facilities and systems, but also for energy management of buildings.
- 3) Management of building facilities can be correctly performed as they have the knowledge and can be adapted to the role of energy manager of the building.

4. Discuss the most prevalent success factors you have experienced whilst implementing EPC in your region/city, organising your answers under the following headings:

- **Financial success factors**

Ensure that investments for improvement of facilities are paid by the savings and as a consequence be an out of balance as a public debt.

Up to now it has not been necessary specific mechanisms for funding the implemented projects under the EPC-ESCO scheme.

- **Administrative success factors**

We were successful in getting the technical and administrative specifications and the contract model for energy services under the typology of guaranteed savings and which is fully adapted to the contracting rules of the public sector.

- **Policy/regulation success factors**

Approval of government agreement (local energy plan) of 2011 and its subsequent extension approved on 2015.

- **Knowledge success factors**

ESCO involvement in the building energy sector addressing two basic concepts: the improvement of facilities and the improvement of its management.

- **Other success factors**

Performed different training courses addressed to the energy managers of the Catalan Government:

- 1) A course for audits interpretation (3 sessions).
- 2) Introducing course to EPC model for the Catalan Government and its buildings (3 sessions).
- 3) Course of buildings energy management (1 session).
- 4) Introduction course (basic concepts) on Measure & Verification Protocol (1 session).

Other more specific courses have been held on:

- 1) EPC training for facilitators, organized by EESI2020 (4 sessions), mainly addressed to ESCOs, Engineering companies and energy managers of 'Generalitat'.
- 2) Advanced and practical course on M&V addressed to ESCOs and Engineering companies (1 session). Another session will be held on early 2016. As is considered necessary but at the same time first one had high expectations.

5. In relation to the success factors outlined, please elaborate on why these factors were of particular importance.

Answer:

The success of these factors has made possible the tendering of 6 projects under the EPC/ESCO model in energy services:

- CAR of Sant Cugat (High performance Sport center)
- Catalan Oncology Institute (ICO)
- AgrooFood Laboratory of Cabriils (DAMM)
- Hospital Joan XXIII of Tarragona (Joan XXIII). Tarragona
- New attached module of CAR. Sant Cugat del Vallès (Bcn)
- Biomedical Research Center.

This represents a total investment of 6 M€ with energy savings of about 12,5GWh/year in electrical energy and 6GWh/year in natural gas. Total CO₂ savings of 6.00Tons per year.

ICAEN keeps its work in order to achieve:

- Create a model of energy services for management of buildings (EPC light). A first test has been performed in 12 High schools
- Consolidation of the energy service contracting models in two modes: Guaranteed savings and shared savings, both as a common procurement models for public administration.
- Help town and regional authorities to fulfill EPC contracts in their buildings and not only for public lighting.
- Transfer the model to the private sector.
- Attract banks to this business with the objective to facilitate to ESCos its projects funding, demonstrating that is a modern sector with proven technologies and less risk.