D2.5 Country Report on Recommendations for Action for Development of EPC Markets

PORTUGAL

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Transparense project

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Abbreviations

ADENE (National Energy Agency)

APESEnergia (Associação Portuguesa de Empresas de Serviços de Energia; Association of Energy Service Companies)

EED (Energy Efficiency Directive)

EIB (European Investment Bank)

EPC (Energy performance Contracting)

ESCO (Energy Services Companies)

ECO.AP (Programme for Energy Efficiency in the Public Buildings)

NEEAP (National Energy Efficiency Action Plans)

PPEC (Plan for the Promotion of Energy Efficiency)

SMEs (Small and Medium Enterprises)

DGEG (Directorate General of Energy and Geology)

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1 Summary

The present report aims at providing recommendations for action for the successful development of the EPC market in Portugal.

The report is building on the data and information gathered by two other similar projects, the European Energy Service Initiative[1] (EESI) and the ChangeBest project[2]. It is also intended as a continuation on the work of the European Commission's Joint Research Centre – Institute for Energy, and more particularly on its 2010 Status Report on Energy Service Companies Market in Europe[3].

The national political will, the new structure for public contracting scheme architecture and the stakeholder's efforts are still not enough to accelerate the diffusion of EPCs in Portugal. It is necessary that the decision makers are consciousness, have the knowledge and trust about the advantages of establishing long term EPC contracts, and especially, there is a need to establish/create a financing mechanism based on joint efforts from the Portuguese government, EU funds and commercial banks to develop long term financing solutions for Energy Efficiency projects – what seems to be the main problem for the EPC implementation in Portugal. The Fund for Energy Efficiency, although short of funds, already exists but it needs to be provided with mutual guarantee funds involving various types of institutions (commercial banks funds + European funds + Private funds+ income from fees, etc.). There is a need for a Task Force, involving financing institutions, credit organizations, but also consultants and technical experts.

2 Introduction

2.1 Methodology

The contents of this report are based on two main sources:

- the results of a nation-wide EPC survey which was sent to the country's main actors within the EPC market

[1] http://www.european-energy-service-initiative.net/eu/toolbox/national-reports.html
[2] http://www.changebest.eu/index.php?option=com_content&view=article&id=43&Itemid=10&lang=en
[3] http://publications.jrc.ec.europa.eu/repository/bitstream/111111111/15108/1/jrc59863%20real%20final%20esco%20report%202010.pdf

- the market knowledge of the authors, as well as research from local / national literature (publications and studies, legislation documents, official statistics and databases)

The first step in collecting the data used in this document was to distribute a survey focused on Energy Performance Contracting (EPC) to the country's most relevant energy services companies, organisations and finance houses. The survey contained questions around four main areas: existing ESCOs and national EPC market; EPC models, financing models and policy initiatives. The answers were then analysed and the results were presented in a previous report in aggregated form (Transparense National Report on identified barriers and success factors for EPC project implementation).

This report goes one step further and makes a series of recommendations tailored for Portugal's national EPC market. These recommendations are based on the information gathered from the respondents to the surveys (in written form or in conversations), as well as on the authors' knowledge of the national market and of any relevant literature / research piece.

This report aims at showcasing the successful experiences for EPC providers in Portugal and separating what has been proven to enhance the EPC offering from what constitutes potential barriers. The recommendations contained in this report have been made in order to tackle the issues highlighted in the previous Transparense report (Transparense National Report on identified barriers and success factors for EPC project implementation). The authors believe that EPC providers / customers and the EPC industry as a whole will benefit from replicating the success factors observed within the national market. These recommendations should be seen as "best practice" guidelines and disseminated within Portugal in order to improve the quality of the EPC market.

2.2 What is Energy Performance Contracting

Energy performance contracting (EPC) is when an energy service company (ESCO) is engaged to improve the energy efficiency of a facility, with the guaranteed energy savings paying for the capital investment required to implement improvements. Under a performance contract for energy saving, the ESCO examines a facility, evaluates the level of energy savings that could be achieved, and then offers to implement the project and guarantee those savings over an agreed term.

A typical EPC project is delivered by an Energy Service Company (ESCO) and consists of the following elements:

- **Turnkey Service** – The ESCO provides all of the services required to design and implement a comprehensive project at the customer facility, from the initial energy audit through long-term Measurement and Verification (M&V) of project savings.
- **Comprehensive Measures** – The ESCO tailors a comprehensive set of measures to fit the needs of a particular facility, include energy efficiency and in addition, can include renewables, distributed generation and water conservation.
- **Project financing** – The ESCO arranges for long-term project financing that is provided by a third-party financing company, typically in the form of a bank loan.
- **Project Savings Guarantee** – The ESCO provides a guarantee that the savings produced by the project will be sufficient to cover the cost of project financing for the life of the project.

Energy Performance Contracting allows facility owners and managers to upgrade ageing and inefficient assets while recovering capital required for the upgrade directly from the energy savings guaranteed by the ESCO. The ESCO takes the technical risk and guarantees the savings.

The ESCO is usually paid a management fee out of these savings (if there are no savings, there is no payment) and is usually obligated to repay savings shortfalls over the life of the contract. At the end of the specific contract period the full benefits of the cost savings revert to the facility owner.

The methodology of Energy Performance Contracting differs from traditional contracting, which is invariably price-driven. Performance contracting is results-driven: ensuring quality of performance. ESCOs search for efficiencies and performance reliability to deliver contractual guarantees.

2.3 Definition of EPC and EPC provider

While there is a vast number of definitions of EPC within Europe, within Transparense project we use the EU wide definition provided by the Energy Efficiency Directive[4] (EED):

"'energy performance contracting' means a contractual arrangement between the beneficiary and the provider of an energy efficiency improvement measure, verified and monitored during the whole term of the contract, where investments (work, supply or service) in that measure are paid for in relation to a contractually agreed level of energy

[4] Directive 2012/27/EU of the European Parliament and of the Council on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC was approved on 25 October 2012.

efficiency improvement or other agreed energy performance criterion, such as financial savings;".

At the same time, within Transparense project, the focus will be given to the EPC projects, where the above mentioned contractually agreed level of energy efficiency improvement" is **guaranteed** by the EPC provider[5]. This is in line with the EED, as in its Annex XIII, guaranteed savings[6] are listed among the minimum items to be included in energy performance contracts with the public sector or in the associated tender specifications. Moreover, in the article 18 of EED, Member States are required to promote the energy services market and access for SMEs to this market by, inter alia**,** disseminating clear and easily accessible information on available energy service contracts and clauses that should be included in such contracts to **guarantee energy savings** and final customers' rights.

Further, within the Transparense, we define the companies providing EPC as follows:

"**'EPC provider'** means a natural or legal person who delivers energy services in the form of Energy Performance Contracting (EPC) in a final customer's facility or premises"

Such definition respects the fact that EPC is only one type of energy services, and is in line with the definition of the energy services provider specified in the EED (for its definition see the glossary at the end of the report). Within the Transparense texts, we use the commonly used term "ESCO" as equivalent of the energy service provider.

3 EPC Code of Conduct

An important step towards a transparent and trustworthy EPC market is the acceptance and widespread usage of the EPC Code of Conduct. Such a Code is being developed under the Transparense project and will be publically discussed with all interested parties to reflect their needs and concerns.

The Code of Conduct is a set of principles describing best practice from EPC providers (primarily) and customers (secondly) in the preparation and implementation of EPC projects in order for them to succeed, maximizing the energy and cost saving resulting from the EPC. The Code is a voluntary commitment and it is not synonymous with any legal obligation. However, acts in violation of the EPC Code of Conduct may cause damage to the EPC providers' and/or the customers' good name. It is also an indicator of the quality

[5] Guarantee of energy efficiency improvement is defined by EN 15900:2010 as "commitment of the service provider to achieve a quantified energy efficiency improvement".
[6] Annex XIII of the EED lists the minimum item as: „Guaranteed savings to be achieved by implementing the measures of the contract."

requirements for new EPC providers entering the EPC market. The EPC Code of Conduct is an in-depth view of what EPC providers and customers believe the EPC excellence is, and it paints a picture of how customers and EPC providers can expect to be treated as a result.

By adhering to the EPC core values of the Code of Conduct, EPC providers and customers develop solid foundations for working partnerships based on trust and confidence. They are expected to utilise the Code in order to further develop energy efficiency services to meet their goals and expectations.

The EPC Code of Conduct aims to improve understanding and awareness of the EPC and raise EPC quality requirements by setting best practice commitments and proposing standards to be met by the EPC providers, in line with other initiatives. The Code encourages the development of voluntary quality labels and tools for certified energy savings, and ultimately further develops energy efficiency policy. As a result, the EPC market as a whole (level of demand + quality of offer) in Portugal will benefit from adherence to the Code of Conduct.

4 Governmental strategy to boost the EPC market

In the recent years, the Portuguese government has assumed a strong commitment in supporting renewable energy and energy efficiency in order to position Portugal as a leading country of the energy revolution that is marking the beginning of the XXI century.

Following Energy Services Directive (Directive 2006/32/EC), and driven by the need to increase companies competitiveness by reducing the energy costs, the Portuguese Government demonstrated some enthusiasm in the implementation of several energy policies towards energy efficiency, putting strong emphasis on energy in the political agenda, and the “National Energy Efficiency Plan – Efficient Portugal 2015”, sets out the grounds for the improvement of energy efficiency. The Portuguese Energy Efficiency Action Plan had an important role in what concerns the deployment of energy services market, and the public sector was chosen to lead this process as a role model on energy savings and efficiency measures. Thus, during the period 2010-2013, the Portuguese Energy Policy has strongly supported the development of commercially viable and competitive market for EPCs, as a main mechanism to achieve the objectives of energy efficiency improvement. In this scope, in early 2011, the Portuguese energy policy gave priority to energy efficiency through the application of reduction targets in the public buildings along with promoting user behaviours and establishing energy efficient requisites for public purchases. When the law to promote energy efficiency in the public sector (RCM nº 2/2011, January 2011) and the diploma to define the legal framework for establishing EPCs in the Public Sector and legislate ESCO

activity was ratified (DL nº 29/2011, February 2011), the number of ESCOs has increased significantly, and more than 100 companies, including utilities, suppliers, consulting companies (including several SMEs), etc., have registered as ESCO companies, in the national registry database (DGEG), with the expectation of participating in the public procurement of energy services, in the scope of the ECO.AP. In addition, the ECO.AP provided a strong regulatory framework for ESCO development in other sectors than the public, and some companies are using this framework to start their energy efficiency projects.

The Transparense project is engaged in collaborating with the governmental agencies and with the ESCO Association in order to overcome the existing barriers for EPCs in Portugal. The SC meetings are being organised in collaboration with DGEG, at the Directorate General of Energy headquarters, and the government entities involved with these issues are participating in the discussions. The Transparense CoC is seen as a good basis to support the qualification of the ESCOs and of the the EPCs and can be a vehicle to help the implementation of article 18.

5 Removal of legislative and administrative barriers

The legislation behind the ECO.AP programme launched the basis to establish EPC contracts, since it created a structure for new public contracting scheme, defined the architecture of the process and the contract template to be followed by all public institutions. In addition, in order to foster market confidence, a qualification framework for ESCOs has been introduced with the ECO.AP. There is an approaval system with strict financial and technical benchmarking that ESCOs should fulfill. This accreditation system comprises two different layers of projects, with different requisites to accomodate small and larger ESCOs, but all must have the technical and financial stucture to make long term energy performance contracts.

When the ECO.AP programme was launched in January the expectation was high. The first public tender was about to be launched by ADENE, the governmental institution that took over the responsibility of managing this programme, for some time, but so far the programme had no further role. However, ADENE is now prepared to launch the first tender and to help with the administrative burden of the public procurement procedures.

In order to facilitate the process, the government also created a new player or new agent in the Public Buildings: the energy manager. This technical person is the responsible for the energy within the building, being the contact point with the ESCOs.

The legal framework for the public sector is established but delays in the public regulation tender have to be overcome to foster the market. Another constraint is related to the type of contract that is foreseen with the regulation for the Public Administration and that does not appeal to ESCO business: on one side the ECO-AP framework defines that the investment should be made 100% by the ESCOs and the contracts do not seem to be balanced, between the ESCO and the public administration, because there are no paying guarantees foreseen in the contracts that securitize part of the investments. The ESCO has no guarantee the state will pay them because no allocations of funds for public buildings are foreseen. This is something that should be considered in the EPC contracts to be firmed. Therefore the recommendation would be to revise the ECO.AP framework in order to include a clause for paying guarantees by the Portuguese State, in order to securitize part of the investment made by the ESCO.

In Portugal, the energy market liberalization still needs further improvements. If the ESCOs could intermediate between the utility and the final customer, they would be able to benefit by negotiating interesting tariffs with the clients, when setting the EPC contracts, in this case EPC+supply. But in Portugal to be an energy supplier, ESCOs have to fulfil very difficult requirements.

In the scope of the NEEAP, some small programmes for promoting energy efficient windows and thermal solar panels were launched last year, but the amounts allocated for these efficiency measures were quite modest and the impact in terms of ESCO business and EPC contracts was not visible. However, ESCOs are also developing these projects but not as EPCs.

6 Information dissemination, education and networking

Some dissemination activities have been organised by the government through the national energy agency (ADENE), to help with financing and educating clients and the Portuguese banks to know more about EPCs, with the aim of increasing the flow of funding for energy and ESCO related projects. In addition, to foster market confidence, a new definition of ESCOs was created and a certification system was developed. However, even with these efforts, the reality is that still there is a need for awareness raising campaigns and training courses targeting mainly the banks and the potential customers. In the first SC meeting, carried out on 13 Nov 2013, it was possible to identify the lack of expertise in the public services, either to launch contracts or to supervise them, as being the second most important barrier for ESCOs business, after financing. ADENE is trying to help with launch of

the tenders for public buildings, but tailor-made training courses targeting the demand and the banks are needed. These courses should be subject specific and thus contribute to increase the knowledge of the parties involved in a contract. It would be quite useful to develop a user-friendly guideline or code of practice and guideline, which should include the CoC but with a wider scope. Subjects to be included are: EPC fundamentals, Procurement Processes, Finance Models, Technology and Delivery, M&V, establish Baselines, Data Management, etc.

To enforce networking is also a key measure to increase EPC knowledge among the main agents involved in this process. Participating in conferences and workshops, is an effective way to establish contacts but the registration prices for International Conferences are usually high (For example the ESCO Europe Conference is quite expensive and small ESCO companies can not afford to attend it, although it is the place where ESCOs should meet and share knowledge and information).

There is an ESCO Association in Portugal (APESEnergia) since April 2011, that practice networking in order to define strategies for the ESCO sector. It has joined together up the 10 ESCO companies operating in Portugal. These companies have been establishing bilateral partnerships or value added partnerships, in order to guarantee financing for some projects and meeting competencies and sharing know how.

7 Financial instruments to support EPC

One of the main conclusions coming from the Change Best seminar organised in May 2012, was that Portugal is far away from achieving the reduction targets defined by the policies, and far away from implementing the potential cost effective saving measures. The successful implementation of the National Energy Efficiency Action Plan, the National Renewable Action Plan and the Europe 2020 Initiative - Energy 2020, is largely depending on the large scale development of Energy Services and of Energy Service Companies. There is a large potential for improving Energy Efficiency in several sectors in Portugal, however the market for energy efficiency services is still not well developed although the high expectation in 2011 when the regulatory framework for the Public Sector was created. No less important was the recognition of the need to break the myth that ESCOs are banks and that Energy Performance Contracts are too complex! More than one year later, and the problems remain. The potential is high, there are quite a large number of ESCOS ready to start projects, but financing is missing. There is therefore an urgent need to bridge this gap!

The Fund for Energy Efficiency, already launched in May 2010, with the objective to support measures and programmes foreseen in the NEEAP, created some expectation among the

ESCO business as being a possibility to leverage ESCO projects associated with the ECO.AP programme. However, the funds available were and are very limited and the flow of funding is not working properly or is not effective. Therefore, there is a need for allocating financial resources to this funding mechanism and to increase the flow of funding. According to some national experts, the Fund for Energy Efficiency should be a combination of different financing sources, from public / government funding, private funds, European funds, etc., like the successful example of the Green Investment Bank in the UK.

Although the Portuguese Government is committed to help unlock the barriers for energy efficiency, financial constraints such as financing availability and the price of the money, are still the most important barriers for energy efficiency projects being carried out. Therefore, the main recommendation would be the obligation to use the European funds for energy efficiency projects. These funds could supply the Fund for Energy efficiency, together with other funding flow, as mentioned before. JESSICA Fund proposes a funding mechanism that seems very interesting for the Public Administration, see below:

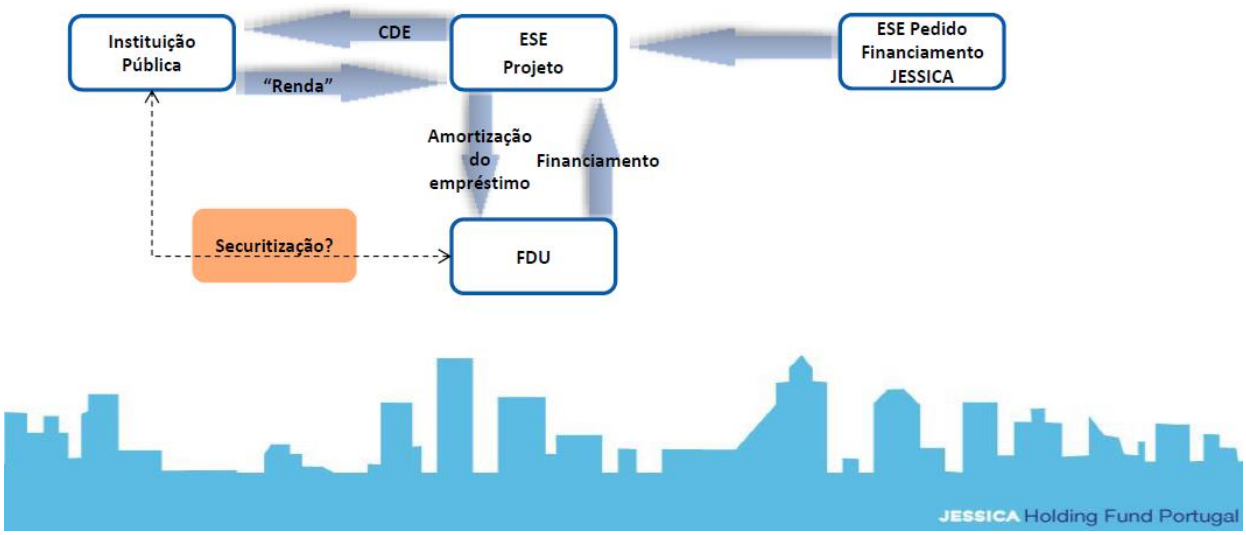

Figure 1 – JESSICA Fund suggestion for the ECO.AP EPC project financing implementation (Transparense seminar, 13 November 2013).

The solution that is suggested in Figure 1 for the financing of the EPC projects in Public Administration (ECO.AP), seems to be the preferred solution either for financing sector or for the ESCO companies, but not for the Energy Ministry, because it requires securitization for the loan from the Public Administration.

In the above model, the Public institution is the one that assumes the risk for the financing of the EPC project and the ESCO assumes the risk of the "guaranteed savings" model, although the payment is made through the ESCO via the energy saving costs. This way the bank will get better guaranties for the payment (by securing revenues, blocking of funds,

bank guarantee, heritage, etc). The problem is that neither the ECO.AP framework nor the Portuguese Public Contracting legislation enables public entities to assume the financing risk.

The recognition of the importance of investing in EE renovation of building stock drastically increased the quantity of EU money available for EE in buildings in the upcoming 2014-2020 funding period and significant Structural Funds were announced [http://www.renovate-europe.eu/renovate-europe-day-2013/programme-reday2013]. The Structural Funds must stimulate growth, reduce regional disparities and deliver tangible benefits to its citizens. The energy efficient deep renovation of buildings represents an ideal opportunity to help MS to save a lot of energy in their buildings and creating hundreds of jobs, fostering the ECSO market and kick start the economy. In a period of economic crisis, when money is not readily available, the European Regional Development Fund (ERDF), Cohesion Fund and European Social Fund represent a golden opportunity to access financing. The Portuguese institutions have some work to do concerning the European Funds and have to design ambitious renovation programs to increase Energy Efficiency in Buildings and take this opportunity of using these several funds for funding the ESCO business. It is now up to national governmental institutions (MS) to draw up national renovation road maps to 2050 to stimulate investment.

8 Conclusions

No longer the political will and the new structure for public contracting scheme architecture, to accelerate the diffusion of EPCs in Portugal it is necessary that the decision makers are consciousness, have the knowledge and trust about the advantages of establishing long term EPC contracts, and especially, there is a need to establish/create a financing mechanism that joint efforts from the Portuguese government, EU funds and commercial banks to develop long term financing solutions for Energy Efficiency projects. The Fund for Energy Efficiency already exists but it needs to be provided with mutual guarantee funds involving various types of institutions (commercial banks funds + European funds + Private funds+ income from fees, etc.). There is a need for a Task Force, involving financing institutions, credit organizations, but also consultants and technical experts.

Definitions and glossary

Term	Definition
energy efficiency (EE)	means the ratio of output of performance, service, goods or energy, to input of energy (as defined by EED)
energy efficiency improvement	means increase in energy efficiency as a result of technological, behavioural and/or economic changes (as defined in EN 15900:2010)
energy management system	means a set of interrelated or interacting elements of a plan which sets an energy efficiency objective and a strategy to achieve that objective (as defined by EED)
energy savings	means an amount of saved energy determined by measuring and/or estimating consumption before and after implementation of an energy efficiency improvement measure, whilst ensuring normalisation for external conditions that affect energy consumption (as defined by EED)
final energy consumption	means all energy supplied to industry, transport, households, services and agriculture. It excludes deliveries to the energy transformation sector and the energy industries themselves (as defined by EED)
guarantee of energy efficiency improvement	means commitment of the service provider to achieve a quantified energy efficiency improvement (as defined in EN 15900:2010)
energy performance contracting (EPC)	means a contractual arrangement between the beneficiary and the provider of an energy efficiency improvement measure, verified and monitored during the whole term of the contract, where investments (work, supply or service) in that measure are paid for in relation to a contractually agreed level of energy efficiency improvement or other agreed energy performance criterion, such as financial savings (as defined by EED)
EPC provider	means a natural or legal person who delivers energy services in the form of Energy Performance Contracting (EPC) in a final customer's facility or premises
energy service provider /energy service company (ESCO)	means a natural or legal person who delivers energy services or other energy efficiency improvement measures in a final customer's facility or premises (as defined by EED)

energy service (ES)	the physical benefit, utility or good derived from a combination of energy with energy-efficient technology or with action, which may include the operations, maintenance and control necessary to deliver the service, which is delivered on the basis of a contract and in normal circumstances has proven to result in verifiable and measurable or estimable energy efficiency improvement or primary energy savings (as defined by EED)

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