D2.6 EU Summary Report documenting the collected information on recommendations for EPC markets

EU-wide

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Transparense project

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List of Abbreviations

DECA – Dienstleister Energieeffizienz und Contracting Austria

DECC – Department of Energy and Climate Change

ECO.AP – Eco-Innovation Action Plan

EED – Energy Efficiency Directive

EESI - European Energy Service Initiative

EPC – Energy Performance Contract

ESCO – Energy Service Company

EU – European Union

M&V – Measurement & Verification

1 Summary

The present report aims at providing a summary of the information collected through the Transparense Surveys of October 2013 across the 20 participating EU countries. The Surveys, directed at EPC providers as well as banks and finance houses, were designed in order to obtain information for a comprehensive overview of the existing EPC market in the EU.

National reports summarising the information obtained for each country involved and identifying recommendations for the development of each national EPC market have already been produced (D2-05). This EU-wide is not a compilation of everything that was presented in the national reports. Instead, it presents a summary of the main recommendations found in each national report, and groups these recommendations when possible. As the report shows, several countries suffer from the same barriers to their EPC market, and would benefit from similar policies and solutions.

For a more thorough view of all the information collected, it may be useful to refer to the national country reports (D2-05).

This 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].

[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://iet.jrc.ec.europa.eu/energyefficiency/sites/energyefficiency/files/escos-market-in-europe_status-report-2010.pdf

2 Introduction

2.1 Methodology

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

- the results of an EU-wide EPC survey which was sent to each country's main actors within the EPC market
- the information contained in each national report (D2-05), which was also based on the market knowledge of the authors, as well as research from local / national literature (publications and studies, legislation documents, official statistics and databases)

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.

EPC project is typically a **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. The project consists in 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. If the client wishes, 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.

The **key elements** of an EPC project are the following:

- A precise **definition of energy performance goals** to be achieved within certain duration of time by material and/or nonmaterial investment (Ortega 2014).
- **Savings guarantee:** The EPC provider guarantees the achievement of the contracted level of savings of energy and/or related costs. The ESCO is obligated by the contract to repay savings shortfalls over the life of the contract. At the end of the specific contract period the full benefits of savings revert to the facility owner.

- **Measurement & verification** of energy consumption and energy efficiency gains (Ortega 2014).
- EPC provider bears **risks of technical implementation and operation**[4] and guarantees the outcome and all inclusive cost of the services for the duration of the contract. EPC provider takes over negotiations and business arrangements for the client, thus decreasing the commercial risks on the client side.

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 methodology of Energy Performance Contracting is results-driven: ensuring quality of performance.

2.3 Definition of EPC and EPC provider

While there are a vast number of definitions of EPC within Europe, within Transparense project we use the EU wide definition provided by the Energy Efficiency Directive[5] (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 efficiency improvement or other agreed energy performance criterion, such as financial savings;".

At the same time, within Transparense project, we assume that the above mentioned "contractually agreed level of energy efficiency improvement" is **guaranteed** by the EPC provider[6] as guarantee of savings is one of the a key elements of the EPC. This is in line with the EED, as in its Annex XIII, guaranteed savings[7] 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

[4] The ESCO bears risks of operation, though in most cases the installed equipment is operated by a customer or an external operator.

[5] 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.

[6] Guarantee of energy efficiency improvement is defined by EN 15900:2010 as "commitment of the service provider to achieve a quantified energy efficiency improvement".

[7] Annex XIII of the EED lists the minimum item as: „Guaranteed savings to be achieved by implementing the measures of the contract."

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[8].

The **minimum items that should be included in energy performance contracts with the public sector** or in the associated tender specifications are listed in Annex XIII of the EED and consist in:

- Clear and transparent list of the efficiency measures to be implemented or the efficiency results to be obtained.
- Guaranteed savings to be achieved by implementing the measures of the contract.
- Duration and milestones of the contract, terms and period of notice.
- Clear and transparent list of the obligations of each contracting party.
- Reference date(s) to establish achieved savings.
- Clear and transparent list of steps to be performed to implement a measure or package of measures and, where relevant, associated costs.
- Obligation to fully implement the measures in the contract and documentation of all changes made during the project.
- Regulations specifying the inclusion of equivalent requirements in any subcontracting with third parties.
- Clear and transparent display of financial implications of the project and distribution of the share of both parties in the monetary savings achieved (i.e. remuneration of the service provider).
- Clear and transparent provisions on measurement and verification of the guaranteed savings achieved, quality checks and guarantees.

[8] This means we cover by the term ESCO only the companies providing energy efficiency services, not the companies who provide e.g. only financial services.

- Provisions clarifying the procedure to deal with changing framework conditions that affect the content and the
- Outcome of the contract (i.e. changing energy prices, use intensity of an installation).
- Detailed information on the obligations of each of the contracting party and of the penalties for their breach.

3 Governmental strategy to boost the EPC market

For a vast number of countries (Germany, UK, Lithuania, Spain, Czech Republic, Slovakia), the first recommendation is for governments to declare EPC a priority in the energy-efficiency sector; and to create a long-term, coherent policy programme to support this. The Czech Republic mentions that Support for EPC should be strategic, at whole government level, not just at ministerial level. In Greece, the national report calls for government support through the establishment of a clear and straightforward legal framework. In the UK, Latvia and the Netherlands, it is suggested that the focus should be on policies that will specifically increase customer demand for EPCs. The Hungarian experts suggest that policies should be made at an ambition level that is most cost-effective and socially beneficial. The Norwegian report encourages authorities to actively promote the EPC concept within the national market. A few countries also recommend subsidy programmes for EPC (Slovenia, Germany).

Most countries see the establishment of a long-term strategy and implementation plan as a necessity in order to successfully implement the Energy Efficiency Directive; and particularly Article 18 (Hungary, Latvia, Lithuania, Austria, Slovakia). In Spain, it is recommended to include a chapter on EPC implementation in public property in the next Plan of Energy Efficiency (2014-2020). In Portugal, a set of strong policies supporting EPC and the use of the Transparense Code of Conduct are seen as a good basis to support the EPC market and the implementation of Article 18. In Netherlands, it is advised to support the energy services market by implementing the EED thoroughly. Similarly, suggestions for Italy involve the implementation of National Action Plans to transpose the EED requirements nationally. The report for the Czech Republic recommends creating a governmental decree establishing an EPC Action plan, its rules, time schedule and financial framework: first in governmental buildings, then in buildings owned by municipalities and regions.

Another particular focus for many countries is the emphasis on developing EPCs in the public sector: in the Czech Republic, the report calls for a bulk of measures to create rules for EPC implementation and approval in the public sector. In Germany, it is seen as important to eliminate budgetary barriers in the public sector. The Dutch report suggests replicating programs in the UK and Germany to facilitate the EPC market in public buildings. In Austria, the report recommends the creation of programmes to tender EPC in public buildings.

Several countries also call for governments to “lead by example” by creating strong EPC programs for their ministerial and central government buildings and becoming a big EPC customers themselves (UK, Netherlands, Greece). In Slovakia, experts encourage the setting up of detailed plan for reconstruction of buildings of central government including definition

of requirements and assignment of necessary public financial resources and/or identification of other ways of financing (including EPC). Additionally, the report calls for a detailed plan for reconstruction of public buildings on lower level of administration.

The creation of an ESCO association in countries in which none exists is also recommended by several national reports (Bulgaria, Denmark). Government is seen as being able to give the necessary impulse to the establishment of these national associations, even if they are independent from the relevant ministries once created. Support to EPC facilitators is also encouraged in Germany and Bulgaria.

A few other national reports made more specific recommendations, these can be found summarised below (for more in-depth information please refer to the national reports):

Slovenia:

- Reduce the cost of capital by reducing the risk
- Use EPC Plus for cost effective deep renovations
- Use structural and cohesion funding for EPC Plus

Germany:

- Nationwide information and motivation campaigns for EPC
- Capacity building for building experts and treasurer

Austria:

- Obliged standard for energy monitoring

Bulgaria:

- Removal of the regulated energy price mechanism and creation of a free energy and power market
- Higher level of internalisation of negative externalities

Poland:

- Considering financing from funds provided by ESCO as eligible input of a beneficiary for the project financed by governmental programmes
- Establishing of the governmental body for preparing legal and regulatory solutions supporting ESCO activities.
- Creating a know-how platform for ESCO activities

- Preparing and dissemination of samples documents, in particular EPC and bid for ESCO selection

Greece:

- Increased dissemination of potential ESCO services and projects
- A suitable accreditation system for reliable and qualified ESCOs
- Development of financing schemes by banks in their line of services
- Standardized Measurement and Verification of energy savings

Hungary:

- Public and expert consultations need to be strengthened

Denmark:

- Maintain the support to the market, including facilitating favourable financing schemes
- More information about the concept to clients and potential suppliers, including lessons learned from the first projects

Slovakia:

- Appoint an “advocate” of the energy efficiency from the high policy representatives
- Define clear political competences and responsibilities for energy efficiency

4 Removal of legislative and administrative barriers

Several countries have emphasised the need for an improvement of the public procurement rules, laws and frameworks for EPCs. Clear guidelines for the preparation of tenders as well as a simplification/harmonisation of tendering processes (ideally with standard procedure) are a necessity in Latvia, Hungary, Greece, Poland, Italy and Slovenia according to the national reports. One of the recommendations from the Denmark report was to develop a standard procurement and contracting model to simplify the procurement effort and reduce transaction costs. In a similar vein, the Netherlands, Norway and Latvia reports all urged for the development of national model contracts. In Slovakia, the report recommends to prepare standard (model) procedures and documents for the process of implementing the procurement of EPC based energy services; and to create a framework and then implement awareness, education and training activities focused on the area of EPC based energy services procurement.

The national reports made more specific recommendations, linked to the particular barriers and conditions found in each country. As these are mostly particular to each country, they can be found summarised below (for more in-depth information please refer to the national reports):

Czech Republic:

- Certification of EPC procedures and/or energy services companies should provide guidance for customers in the growing EPC market
- Guidance on preparation and implementation of EPC projects should be updated
- A clear renovation programme for public buildings should be prepared
- EPC method should be made available to buildings managed by organizational units of the state
- Ministry of Industry and Trade should continue to explain the benefits of EPC and to bring further good practice examples in order to increase trust towards this method.

United Kingdom:

- Successful EPC programmes/frameworks should be replicated as much as possible in the public sector.
- Department for Energy and Climate Change (DECC) should publish best practice and guidance documents on EPCs
- Act on the split incentive barrier
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Slovenia:

- Strengthen the role of EPC in the National Energy Efficiency and Renewable Energy Action Plans
- Prepare Deep Renovation Roadmap
- Confirm regulatory and legal framework for implementing EPC
- Change of housing law needed
- Economically feasible first and mandatory
- Introduce obligatory energy management in public bodies buildings
- Introduce obligatory energy audit in public bodies buildings

Slovakia:

- Definition of methodology for not including the liabilities arising from EPC projects into the statutory limits on the indebtedness
- repayment of financial liabilities to the supplier from savings in operating costs for purchasing energy
- Check method of calculating prices (especially heat) for regulated entities that are producers and suppliers of heat from centralized sources or from individual local sources of heat in terms of the inclusion of investment costs for energy-efficient measures

Germany:

- Use of subsidy programmes for EPC.
- Insourcing / Outsourcing
- EPC in the budgetary framework
- Mandatory EPC checks
- Involvement of EPC facilitators

Belgium:

- Administrative adaptation of subsidy schemes
- Output oriented energy efficiency
- Political confirmation legal correctness of EPC-projects

Austria:

- Coordination of responsibilities in operation and investing at public buildings
- Obligation for thermal retrofitting

Bulgaria:

- Removal of restrictions for energy audit by ESCO

- Energy act amendments concerning EPC contracting for public lighting

Italy:

- Simplification of legislation and of the red tape structure
- Continuous diffusion of ESCO Certificates
- Actions obliging EPC-projects and subsidising dissemination, education and networking
- Diffusion of Energy Audits both on public and private sectors

Lithuania:

- Definition of a clear legal status for ESCOs

Poland:

- Introducing ESCO/EPC concept
- Launching a clear and biding instruction the local administration allowing for not recognising liabilities from EPC as a public debt by municipalities,
- Ownerships of energy effect

Portugal:

- Revise the ECO.AP framework to include a clause for paying guarantees by the Portuguese State, in order to securitize part of the investment made by the ESCO

Spain:

- Creation of an effective ESCO register
- In the National Accounting the investments on energy efficiency should not be considered as 'deficit'
- Simplification, centralization and coordination of the public policies about energy efficiency

Greece:

- There should be clear rules on how an ESCO project is being paid from public funds

Hungary:

- Announce national or municipal grants for feasibility studies

Latvia:

- Include deep energy efficiency renovation of multifamily building as part of a social policy to reduce fuel poverty and provide suitable and affordable housing to Latvia

Norway:

- Follow up initiated projects to ensure success stories and to document processes and results
- Continue marketing of and training in EPC to private and public building owners and operators
- Support for project facilitators
- Develop methods and standard documents as well as pilot projects for EPC in new buildings.

5 Information dissemination, education and networking

Most national reports call for a higher level of promotional and information activities to raise awareness and knowledge of the EPC model across all types of stakeholders. The Czech Republic report for example makes it clear that promotional activities should be focused on all target groups: policy makers, public organisations, ESCOs, banks and other stakeholders. Most countries agree with that view. The German report suggests that EPC should be included in the national action plan for sustainable procurement in order to further raise awareness about EPC on the demand side. The Latvian and Spanish reports go in the same direction, encouraging information dissemination about the EPC concept to all types of stakeholders. Promotion of EPC by the Federal and Flemish government is seen as essential in Belgium. In Italy, the experts believe that efforts should be made to communicate to all stakeholders how the EPC market could help their buildings and their businesses, maybe through energy awareness communication initiatives. The Danish report mentions a more coordinated effort, addressing the specific needs and problems in the market, involving governmental institutions, a potential ESCO Association, industry players in general as well as client networks/associations.

Other reports (UK, Netherlands, Portugal) recommend making best practice guides and guidelines available to the public to ensure that the different concepts and models around EPCs are understood. Hungary encourages the promotion of model contracts and of a transparent description of alternative contracts. The Austrian report suggests that creation of independent information centres, the provision of model contracts, as well as increasing the role of a platform for EPC providers (DECA); while Poland mentions the PPP platform. In a similar vein, the Belgian report calls for the creation of a National Observatory on EPC projects and the Italian report for an Italian Observatory on EPC projects to track the amount, size, nature, scope and results of EPC projects in the country. The Slovenian recommendation is to prepare and approve a standardized “EPC toolbox”.

The organisation of trainings and seminars throughout the country to educate all the stakeholders about the benefits of the EPC model is a recommendation made in several countries. The UK and the Netherlands suggest organising a high number of workshops and seminars on EPCs to reach as many potential customers as possible. The UK also suggests to organise training sessions specifically designed for different sections of the market (financiers, suppliers, customers, public sector, etc.). Hungary, Bulgaria, Belgium and Slovenia also encourage that type of initiative, which could potentially be subsidised in the case of Belgium. The Portuguese report recommends implementing tailor-made training courses targeting the demand and the banks, as well as networking events, conferences and

workshops. In Latvia, the experts call for public and private initiatives to transfer know-how, training and networking in the developing EPC market. Denmark mentions capacity building on both the supplier and customer sides. Slovakia, recommends promotional activities focused on each type of stakeholder: policy makers, potential clients, financial institutions.

Countries which do not yet have an ESCO association see the creation of such an association or club as priority in order to disseminate information efficiently (Poland, Hungary, Bulgaria, Slovakia).

The promotion of the Transparense Code of Conduct, once finalised is also mentioned by several reports as an essential way of educating the market (UK, Netherlands, Bulgaria).

Finally, several countries have suggested including EPC theoretical background into existing curriculums at universities such as building engineering programs (Lithuania, Germany); or into public administration colleges or public sector training (Germany, with regards to courses for treasurers, and the UK).

The national reports made more specific recommendations, these can be found summarised below (for more in-depth information please refer to the national reports):

Czech Republic:
- International initiatives should also be pursued (projects financed by the European Commission, etc.)

United Kingdom:
- Promote the use of sound and rigorous M&V techniques

Slovenia:
- Use public buildings deep renovation EPC projects as pilots and best practice

Belgium:
- Policy, actions obliging EPC-projects

Norway:
- Need for independent actors and initiatives/funding to implement dissemination activities on a wide scale

6 Financial instruments to support EPC

A number of national reports have mentioned the importance of subsidies in order to support the EPC model. The Austrian experts have urged for a programme of subsidies for comprehensives EPC projects. In Slovenia, investment subsidies are “still needed”. In the Czech Republic, subsidies are a necessity for the preparatory phase, which is something that Bulgarian experts also suggest implementing. Additionally, the report argues that a combination of an EPC model alongside subsidies to construction measures could have a very positive effect on the market. In Belgium, there different types of subsidies are needed according to the national report: subsidy of a further structuring of the market; subsidy of the facilitation of EPC-projects; and subsidy of innovative pilot projects and applied research. The Czech and Lithuanian reports also explore the possibility of financially supporting EPC facilitation. In Lithuania, subsiding pilot projects is also suggested. The issue of grants is also discussed at lengths in the Hungarian and Slovakian reports (as part of the Operational Programmes fin the Slovakian case). The report concludes that while the intensity of grants should be reduced significantly, the total volume of the grants should be much higher; finally the grants should be announced regularly. In Italy, governmental incentives are seen as essential.

The creation and/or use of a fund to finance EPC projects is also a popular idea amongst several national reports. In Bulgaria, the better use of public funds and programs was mentioned. The Polish experts suggest the creation of a fund used specifically to finance ESCO activities. Hungary and Italy both encouraged the creation of a guarantee fund. The Spanish report recommends the consideration of support mechanisms such as funds and grant programmes as key drivers. The Portuguese report proposes an obligation to use the European funds for energy efficiency projects as a way to boost financing of EPC projects. In the UK, the report argues that EPC stakeholders have to take better advantage of the funding schemes available to them, as some of them remain relatively unknown. The German report argues that it is advisable for funding providers to integrate EPC directly and explicitly into funding programmes. Slovakian experts recommend the establishment of long-term loans for implementation of long-term measures (while short-term measures will be still financed through the ESCOs) provided from investment funds developed with initial contribution from structural funds.

Affordable financing and in particular third-party financing is also mentioned as a necessity in several countries (Bulgaria, Italy, Lithuania). In Denmark, the report states that tailored third-party financing schemes may be needed in relation to the private and residential

sector. In Germany, loans from commercial banks need to be more specifically available for energy-efficiency projects.

Other suggestions are also made: the UK report recommends creating a new asset class specifically for EPC or energy-efficiency projects. The Italian report calls for the use of revolving funds. In the Netherlands, the report states that the use of special-purpose vehicle as well as training sessions for banks and finance houses should be promoted.

The national reports made more specific recommendations, these can be found summarised below (for more in-depth information please refer to the national reports):

Slovenia:-

- Use structural and cohesion funding for EPC Plus
- Use EPC Plus for cost effective deep renovations
- Reduce the cost of capital by reducing the risk

Germany:

- Simplify and standardise the forfaiting model, especially the requirement of the waiver of defences issued by the municipality/authority

Austria:

- Assume the liability for client's payments
- Search machines for public subsidies

Latvia:

- Creating a secondary market for EPC contracts;
- Setting up programmes to resell EPC contracts to investors in the secondary markets;
- Attaching energy efficiency incentives to mortgages;
- Increasing awareness of buyers of real estate through ratings and information;
- Providing customers with their energy use data.

Denmark:

- Municipalities to be given dispensation from budgetary limitations with regard to energy renovation projects

Slovakia:

- Grants to public building owners/users for implementation of long-term measures (while short-term measures will be still financed through the ESCOs)

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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