



## D2.1 European EPC market overview

Results of the EU-wide market survey



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### **Transparensense project**

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[www.transparensense.eu](http://www.transparensense.eu)

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## 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 barriers and success factors for the implementation of EPC projects have already been produced (D2.4). This EU-wide is not a compilation of everything that was presented in the national reports. Instead, it presents two types of information: summary statistics across all countries (i.e. EU-wide averages), and cross-country comparisons.

For a more thorough view of all the information collected, it may be useful to refer to the online databases (D2.2) or the national country reports (D2.4).

This report is building on the data and information gathered by two other similar projects, the European Energy Service Initiative<sup>1</sup> (EESI) and the ChangeBest project<sup>2</sup>. 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<sup>3</sup>.

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<sup>1</sup> <http://www.european-energy-service-initiative.net/eu/toolbox/national-reports.html>

<sup>2</sup> [http://www.changebest.eu/index.php?option=com\\_content&view=article&id=43&Itemid=10&lang=en](http://www.changebest.eu/index.php?option=com_content&view=article&id=43&Itemid=10&lang=en)

<sup>3</sup> [http://iet.jrc.ec.europa.eu/energyefficiency/sites/energyefficiency/files/escos-market-in-europe\\_status-report-2010.pdf](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 (D2.4), 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)

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 within each country. The results presented in this report are both aggregated statistics in order to derive average trend across the EU; and cross-country comparisons using information contained in each national report.

The survey was sent and communicated to most major EPC providers across the 20 EU countries involved in the Transparense project, through direct meetings, phone conversations or emails. The survey was filled in in full by 141 of them.

A slightly different survey, modified for a different target audience (banks and finance houses) was also sent to the major banks and financiers across the 20 EU countries. Responses were obtained for 42 of them.

Once the survey responses had been obtained, additional information was gathered by the national authors in order to present a thorough and up-to-date picture of the state of the EPC market in each country.

### **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

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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**<sup>4</sup> 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.

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

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### 2.3 Definition of EPC and EPC provider

While there are a vast number of definitions of EPC within Europe, within Transparensense project we use the EU wide definition provided by the Energy Efficiency Directive<sup>5</sup> (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 Transparensense project, we assume that the above mentioned “contractually agreed level of energy efficiency improvement” is **guaranteed** by the EPC provider<sup>6</sup> 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<sup>7</sup> 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 Transparensense, 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 Transparensense texts, we use the commonly used term “ESCO” as equivalent of the energy service provider<sup>8</sup>.

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<sup>5</sup> 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.

<sup>6</sup> Guarantee of energy efficiency improvement is defined by EN 15900:2010 as “commitment of the service provider to achieve a quantified energy efficiency improvement”.

<sup>7</sup> Annex XIII of the EED lists the minimum item as: „Guaranteed savings to be achieved by implementing the measures of the contract.”

<sup>8</sup> 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.



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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.
- 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 The EPC market in the European Union: an introduction

The 20 countries involved in the Transparensense project are at different stages of development of their EPC market. For the benefit of this project, it was recognised at the start that each country may have different needs, expectations and characteristics depending on the level of advancement of its EPC industry. The following table summarises where each participating country stands in terms of EPC development, using three easily understandable qualifications: “beginner”, “intermediate” and “advanced”.

Beginner market	Intermediate market	Advanced market
Slovakia	Spain	Czech Republic
Bulgaria	Portugal	Germany
Belgium	Denmark	Sweden
Netherlands	Norway	Austria
Poland	Italy	United Kingdom
Latvia	Slovenia	
Lithuania		
Greece		
Hungary		

It should be understood that this remains a broad characterisation, and that its main purpose is to help create standardised tools of development suited to each particular situation. However, there is no mechanical relationship between the classification above and actual market statistics: a “beginner” country can have a higher number of EPC providers than an “intermediate” one; an EPC association in an “intermediate” country can be more active than one within an “advanced” one, etc.

The next sections will give concrete examples of cross-country comparisons (EPC models, financing situations, drivers, barriers, etc.) reflecting the diversity of situations shown in the table above.

This section however, as a way of introducing the information collected using the Transparensense Surveys, will present several charts illustrating the state of the EU EPC industry throughout the EU.

As the following three charts illustrate, the most cited response by EPC providers when asked how best to describe their company is “ESCO”, with “Energy consulting” and “Equipment supplier / installer” also among the popular answers. Many respondents also preferred describing their company as a mix of all the possible denominations. The provenance of the EPC providers’ customers is very balanced at the EU level: 42% public and

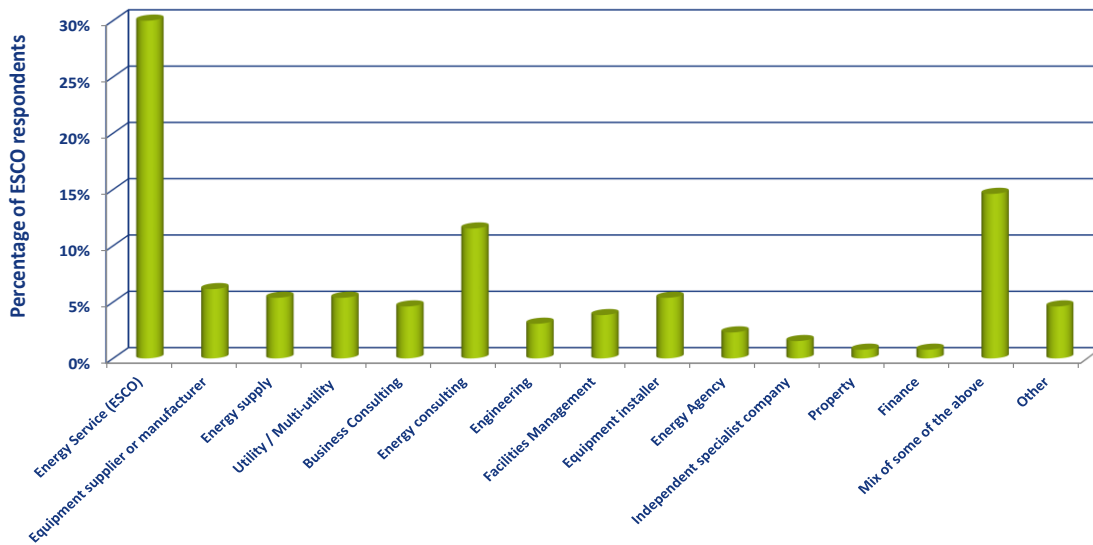
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governmental sector, 37% private business sector and 38% a mixture of both. More granular information is observable on Figure 3, with country-specific details.

Figure 1: Category best describing respondent's activities

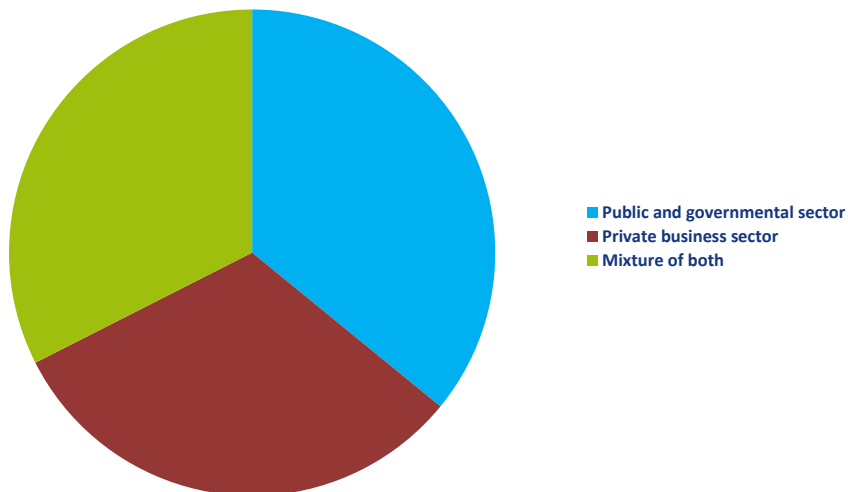
**Transparensense Survey (October 2013)**  
**Category best describing respondent company's activities**



Source: Transparensense EPC Survey (2013)

Figure 2: Customer Provenance

**Transparensense Survey (October 2013)**  
**Customer Provenance (in percentage of ESCO respondents)**



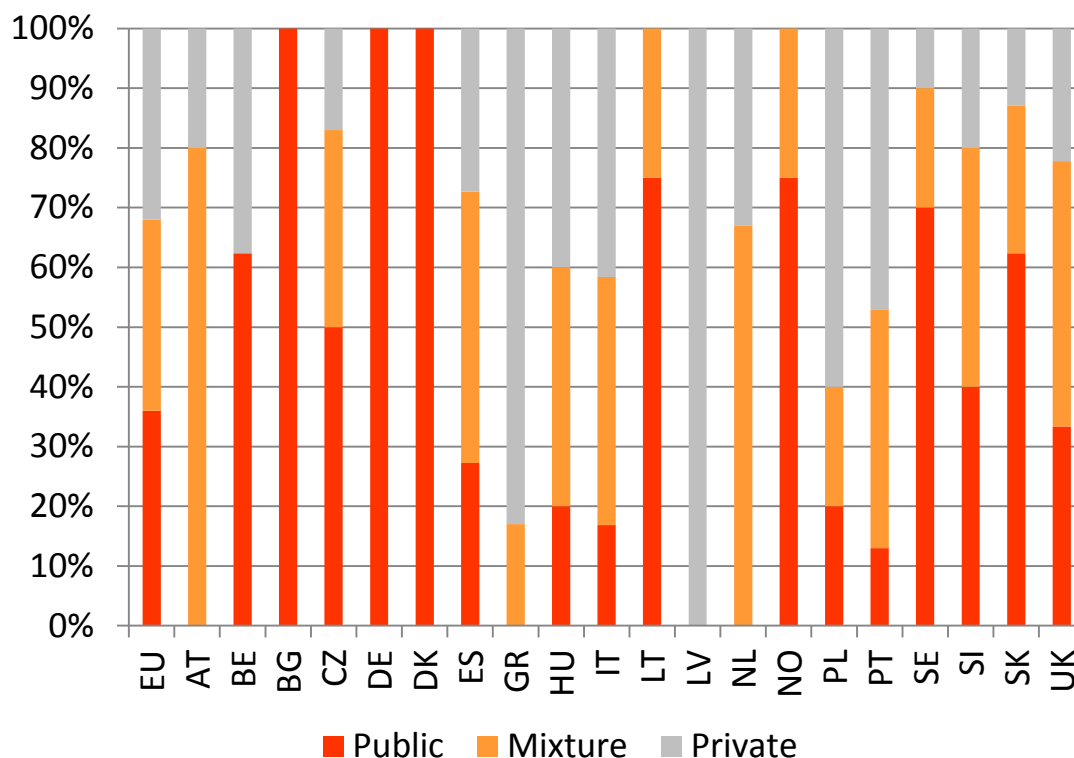
Source: Transparensense EPC Survey (2013)

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Figure 3: Customer Provenance by country



Source: Transparense EPC Survey (2013)

The outlook for the EU EPC market taken as a whole is slightly more positive than it was a few years ago. Over 56% of ESCO respondents have seen slight or major growth over the last 3 years. 31% believe that the market has stagnated. Only 12% are witnessing a decline (slight or major). Figures 4 and 5 show the results in detail, respectively overall and by country.

The number of EPC projects started in the last two years is mostly comprised between 1 and 5. Only a third of respondents had started more than 5 projects. 18% of them, however, had started none.

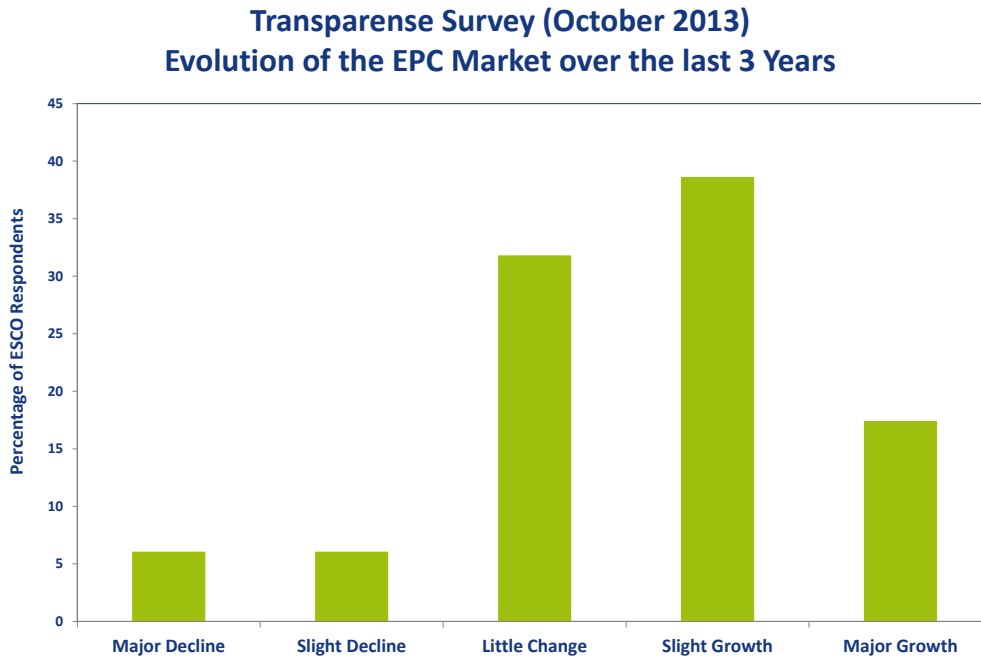
The initial investment outlay from ESCOs for EPC projects is well balanced across the EU, from small projects (under 200 000€) to larger size projects (from 1 to 5 Million €).

The length of a typical EPC project is between 5 and 10 years for the majority of the EU respondents. Figures 7 and 8 show the results in detail, respectively overall and by country.

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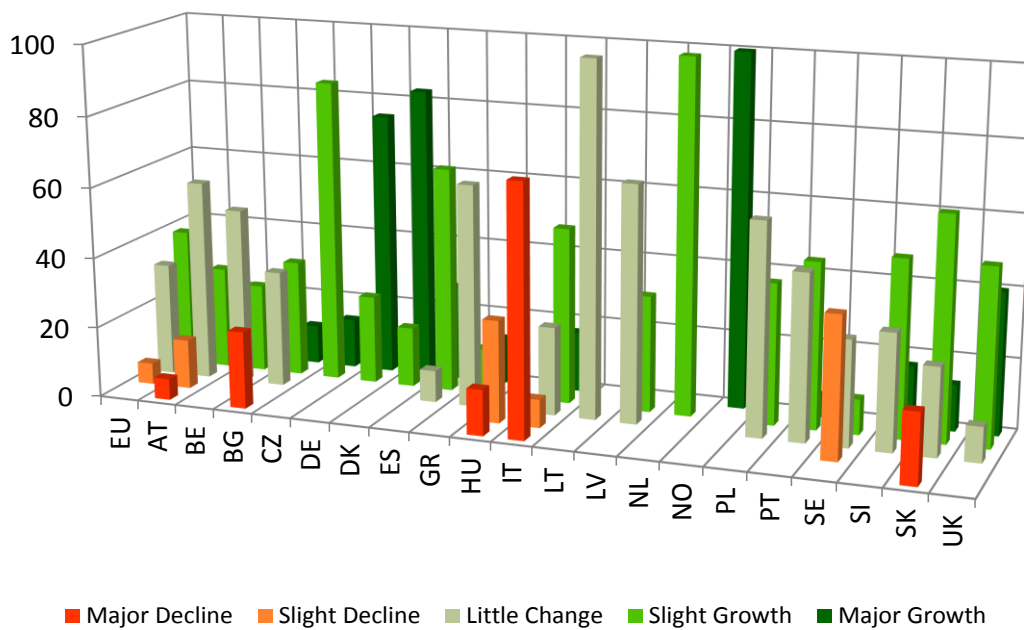


Figure 4: Evolution of the EPC Market over the last 3 years



Source: Transparensense EPC Survey (2013)

Figure 5: Evolution of the EPC Market by country over the last 3 years

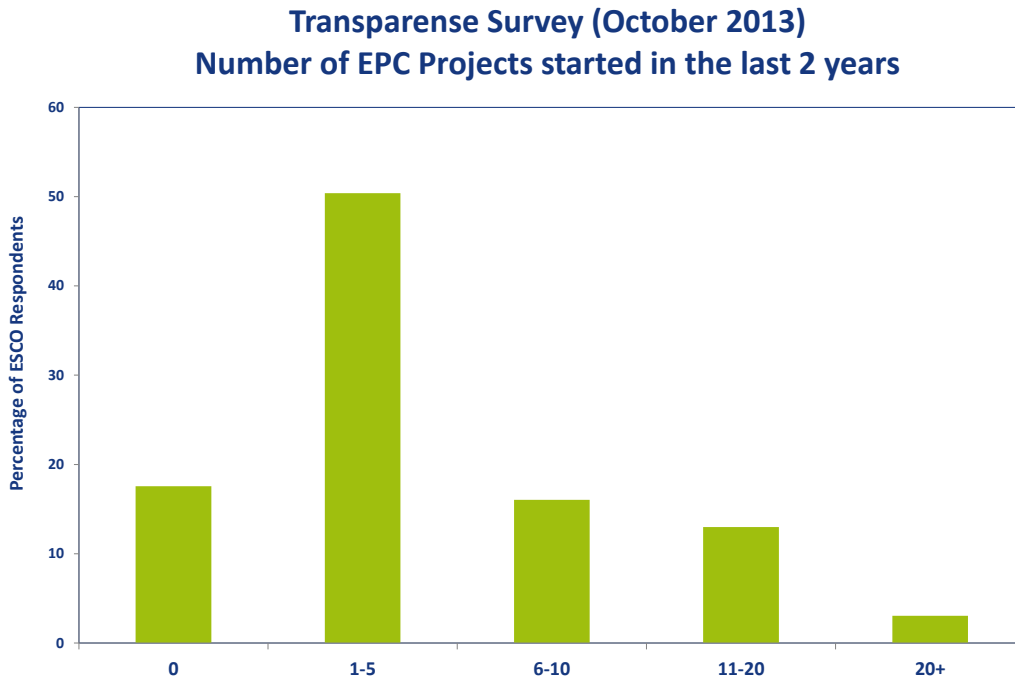


Source: Transparensense EPC Survey (2013)

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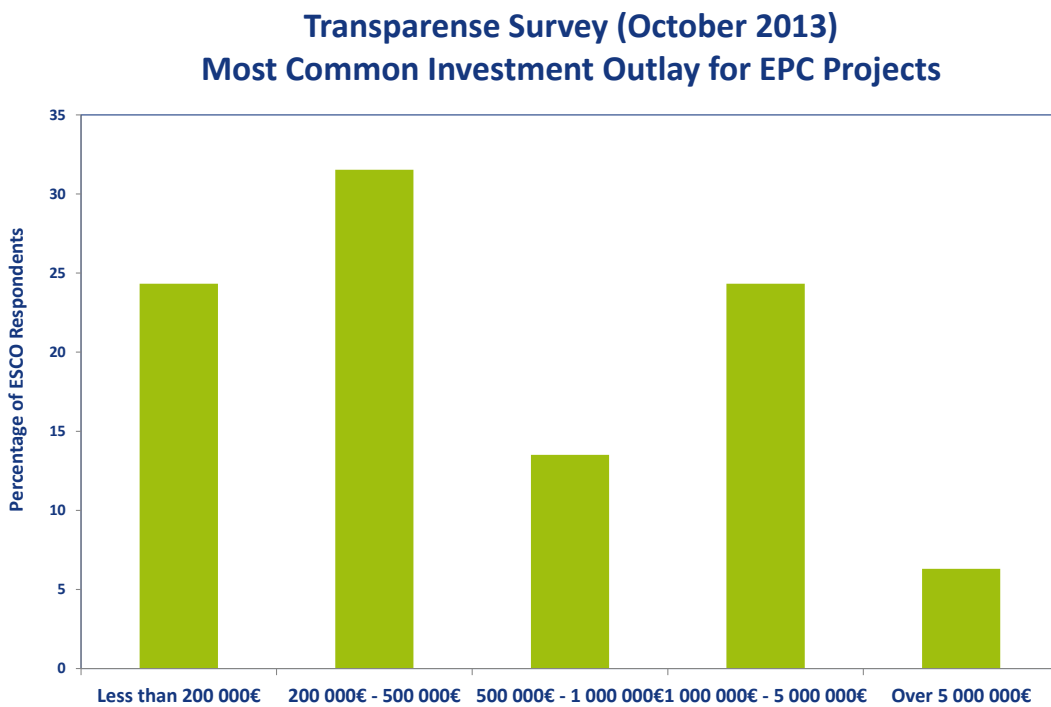


Figure 6: Number of EPC Projects started in the last 2 years



Source: Transparensense EPC Survey (2013)

Figure 7: Most Common investment Outlay for EPC Projects

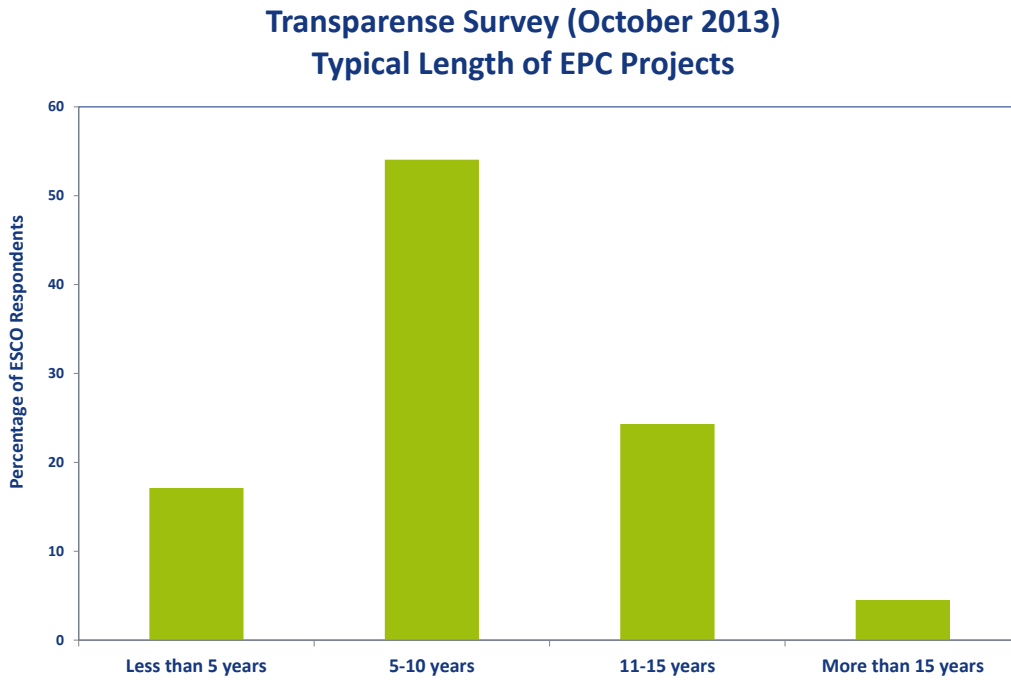


Source: Transparensense EPC Survey (2013)

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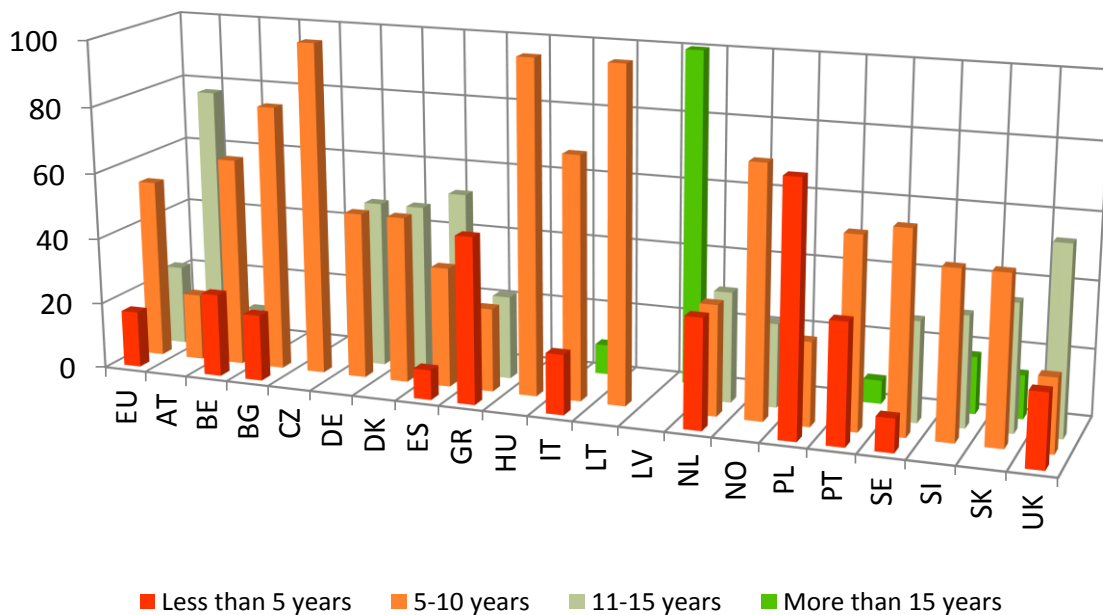


Figure 8: Typical Length of EPC Projects



Source: Transparense EPC Survey (2013)

Figure 9: Typical Length of EPC Projects by country



Source: Transparense EPC Survey (2013)

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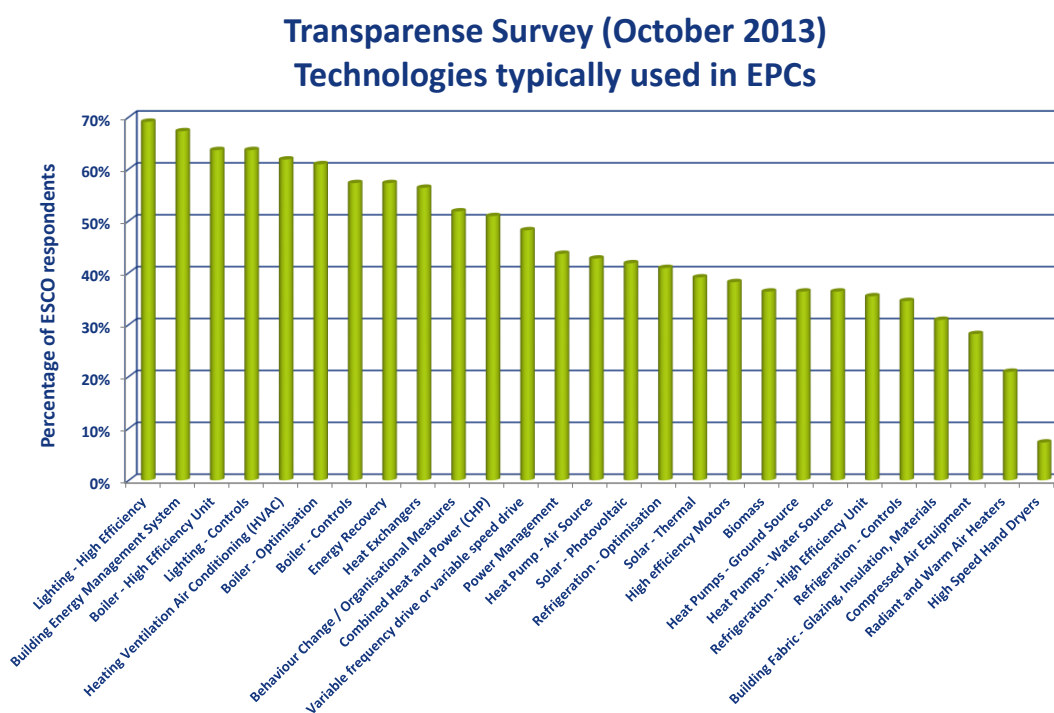
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In terms of the technologies typically chosen to feature in an EPC, the results are not surprising: lighting (high efficiency or controls), building energy management system, boiler upgrades and heating ventilation & air conditioning improvement are amongst the highest mentioned responses.

The building types in which EPCs are being implemented the most are predominantly public buildings (hospitals, schools, universities), as well as hotels, offices, and maybe more surprisingly industrial premises.

Figure 10: Technologies typically used in EPCs



Source: Transparensense EPC Survey (2013)

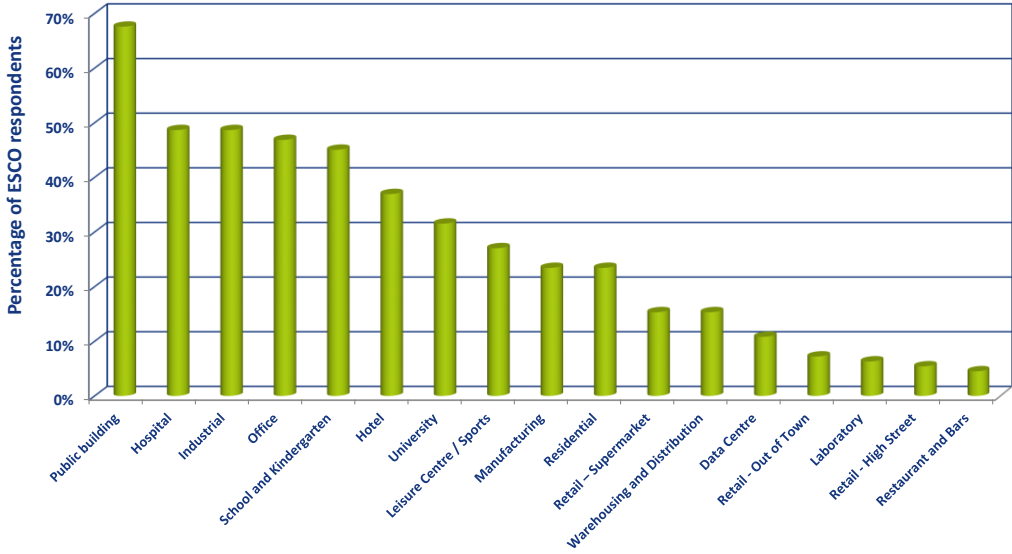


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Figure 11: Building Types selected for EPCs

Transparense Survey (October 2013)  
Building Types selected for EPCs

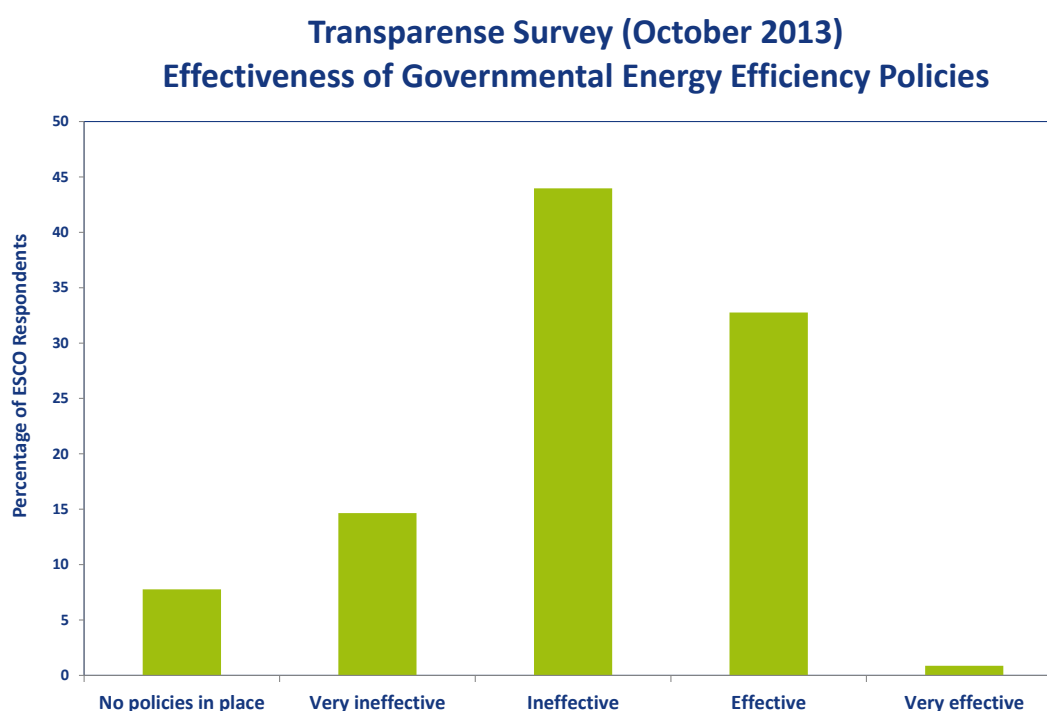


Source: Transparense EPC Survey (2013)

## 4 Legislative and Regulatory landscape for the EU EPC market

The results from the Transparense survey at EU-wide level make it clear that the energy policies from individual European governments are mostly seen as ineffective. As shown in the next two charts, the dissatisfaction appears to be even greater with specific EPC policies, with over 80% of ESCO respondents answering “no policies in place”, “very ineffective” or “ineffective”. General energy efficiency policies seem to be viewed in a slightly more favourable way, with almost 35% of ESCO respondents choosing to brand them “effective” or “very effective”.

Figure 12: Effectiveness of Energy Efficiency Policies

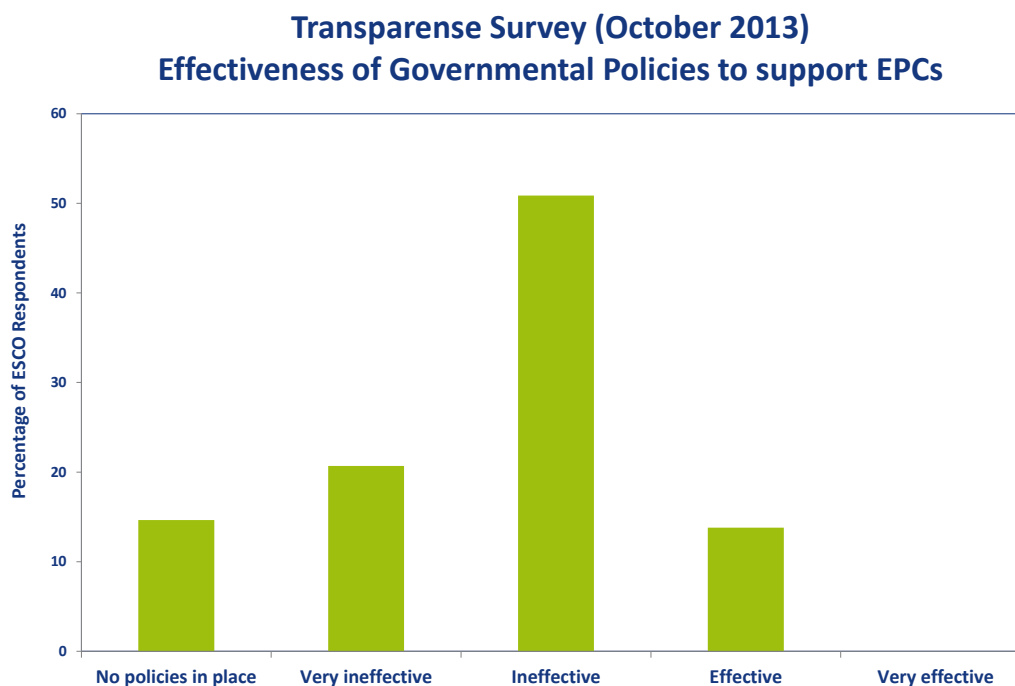


Source: Transparense EPC Survey (2013)

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Figure 13: Effectiveness of EPC Policies



Source: Transparensense EPC Survey (2013)

For several countries, mostly in the “beginner” market section, the lack of a developed market and of targeted incentives and policies from the government makes it difficult for the sector to expand. In the Netherlands for example, there are no policies that stimulate Energy Performance Contracting directly, even if some energy saving policies lead to incentives for EPC projects. There is a clear lack of support from the government, and no regulation that enforces energy-saving measures in non-residential buildings. In Lithuania, there is no legal definition or requirement of ESCOs, and the government does not provide any financial support to ESCOs. As a result the EPC sector in these countries is still very much in its infancy.

In Belgium, the most important subsidy schemes for energy saving investments cannot be used for subsidising energy saving investments realised via an EPC-project. On top of that, the organisational complexity of the country adds a layer of difficulty: each of the three Belgian regions adopts EU Directives differently and has its own subsidy scheme for energy efficiency measures, and his own approach towards EPC. This is of course not favourable for ESCOs that are typically active in all the three regions of the country. Similarly, in Hungary, the legislative framework both for energy efficiency in general and for ESCOs/EPC is very weak at the moment. There are no serious steps taken for the improvement of the legislative and financial frameworks, although there are some sporadic (but not strategic)

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actions. The grants are very small, which is shown by their rapid distribution, often within a few days. Structural and political instability, corruption as well as counter-effective, short-sighted regulations are also major issues. Due to the policy instability companies are reluctant to engage in long-term contracts.

A similar situation exists in Greece, where the political and financial uncertainty, including unstable energy prices, ownership, regulations and business environment, makes it very difficult to establish any long-term EPC policy. Complicated procedures of public tenders also act as a barrier to EPCs in the public sector, such as separate tenders for the design phase and for the construction phase of a project. However, some projects are still going ahead: the National Strategic Reference Framework (NSRF) will fund the first pilot program of energy interventions in public buildings, which CRES is in charge of, and concerns 7 large public buildings. Generally speaking, public ESCOS are being established in order to enhance the market, although such ESCOS have not become major players, their potential should be considered in augmenting energy savings. The National Strategic Reference Framework (NSRF), which will fund the first pilot program of energy interventions in public buildings (7 large public buildings) is also worth being mentioned.

In Bulgaria, the unpredictable national policy is a also major barrier, as it makes companies (e.g. potential EPC clients) more cautious when planning longer term investments. A recent example is the Government policy to reduce the energy (especially electricity) prices, despite the increasing energy costs. There are no possibilities to obtain grants related to any EPC phase.

In Latvia, at the moment, legislation is rather restrictive than supportive. Public budgeting rules discourage savings. Public procurement law hinders the participation of ESCOs in tenders. The Structural Funds for Energy Efficiency in Buildings helped the industry to emerge, however the requirements of the programme remarkably increased transaction costs for EPC. At regulatory level cross subsidies are as well as mentioned by an ESCO as a general barrier, which is distorting energy prices. In order to promote the development of the EPC market in Latvia, the Housing and Energy Conservation Bureau has held seminars and workshops and brought all the stakeholders together. The seminar was attended by representatives of government, financial, construction companies', maintenance companies' sector and European Bank of Reconstruction and Development as well as representatives of NGOs and association of the apartment owners. At the moment the Bureau in collaboration with the Ministry of Economics is starting to push the EPC into new stage and is starting development of the guidelines of EPC as well as discussing the financing options.

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In Poland, the term “ESCO” does not exist in the legislative system. As a result there is no direct instrument like preferential loans, subsidies or guaranteed fund addressed specifically to ESCOs or EPC providers.

In Slovakia, relevant EU Directives in the field of energy performance of buildings and energy services have not been transposed sufficiently into Slovak legislation and national strategic documents.

Countries understood to be in the “intermediate market” group have similar issues, albeit with a few more positive developments. In Norway, there is no other legislative enforcement of energy efficiency or EPC. Public administrations have had few formal incentives to implement energy saving or climate measures. Strained economies, lack of knowledge and time and organisational issues have resulted in little focus on this.

In Spain, there are not many EPCs and the Government is not using this model. Tenders in particular are stopped, due to the lack of a clear interpretation in the budgetary law of recognition/not recognition of EPC liabilities as public debt. Similarly there is no clear interpretation in tax and accounting acts concerning liabilities recognition. This was visible in the responses to the Transparense survey as “lack of regulation / support from the government” and “subsidy / policy uncertainty” were the two most cited barriers to the EPC industry. On the positive side, it is important to highlight the active role of ESCO associations in the development of the market. The Associations are a tool to contact different companies to work together in projects, provide update information to ESCOs about regulations, policies, provide assessment to prepare the “best offer”, etc.

In Portugal, the government’s action in supporting the diffusion of EPCs in the country has been very ineffective, and there is a lack of policy mechanisms to encourage the uptake of EPCs. However, there has been significant progress over the last three years regarding the legal framework and regulatory factors to promote and foster the diffusion of energy services. The legal framework conditions necessary for the development of ESCO business in Portugal are in place with the recent diploma about Energy Efficiency Services and Energy Service Companies that was enacted on 28 February 2011. In addition, in the scope of the Portuguese NEEAP, the ECO-AP programme was launched, with the aim of promoting energy efficiency, in particular through programs to reduce the consumption and the promotion of changing behaviour by means of reducing energy consumption in the public buildings. Moreover, to foster market confidence, an accreditation and certification system for ESCOs has filtered the ESCOs to guarantee that only ESCOs with a good financial situation would be eligible to apply for the public tender of the Eco-AP. Programme. There is hope that this effort based in the public sector will also benefit the private sector. The legal framework

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conditions, the minimum requirements for operation, inspection and accreditation of the ESCO business and the establishment of EPCs are in place and the potential for improvements is high.

In Italy, there were about 150 ESCOs in 2005, but in 2006 a new law that limited and restricted requirements to become an ESCO brought the number down to about 75. Recently requirements for being an ESCO are set by Italian standard CEI 11352. The Transparense survey made it clear that respondents are not generally satisfied (about 90%) with the government support for EPC policy. This is a trend mentioned in different studies and reports and it is often noted that more could be done to help the EPC industry at a government/institutional level. It is really important to note how EPC business diffusion is limited by institutional barriers according to ESCO respondents: they noted “subsidy or policy uncertainty” and “regulation / lack of support from the government” as the main barriers.

In Slovenia, The national energy legislative framework is not directly addressing or supporting the EPC which often leads to judicial activism. The ESCOs providing EPC have developed their “own know-how” how to avoid grey areas. General solutions were presented to the relevant ministries which unofficially agree with them; however the implementation risk remains high due to possible ambivalent interpretation of the relevant legislation. In the public sector, EPCs are performed in the framework of the Public Private Partnership Act and in line with Public Procurement Act, both introducing high level of complexity into the EPC implementation process and consequently increasing costs. The on-going energy efficiency saving scheme system enabled a significant EPC break-through in the period 2012-2013 establishing a stable financing source (subsidy) accessible to all ESCOs. As a result energy distributors and retail energy sales companies through implementation of the scheme realised the potential of the EPC market, gained knowledge on the EPC and started to intensively develop own EPC projects portfolio.

In Denmark, ESCOs have been promoted and encouraged in different national policy papers, and are considered an essential measure for meeting international as well as national goals on energy savings and CO2 reductions. There is no specific legal ESCO framework but some regulatory measures have been major drivers in the development of the ESCO market, most notably energy labeling in relation to the transposition of the recast EPBD (2010/31/EU) and further the EEO (Energy Efficiency Obligation Scheme). Capacity building has not taken place as a coordinated effort, but different initiatives by Governmental institutions have contributed to promote the ESCO/EPC concept such as workshops, guidelines and collection of knowledge and 'best practice' etc. As a result, the market is mainly driven by the general strong energy efficiency framework, industry and other stakeholder support as well as local initiatives and commitment (Danish municipalities in particular). Nevertheless, there is as

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such no overall coordination of the development of specific framework conditions; and there is no real ESCO Association in place either.

In the “advanced markets”, the situation is slightly more favourable. In the Czech Republic, the growth and development of EPC market can be attributed almost exclusively to the work of the ESCOs themselves. The support from state remains low whereas administrative and legislative barriers high. So far, EPC (and energy services in general) have been neglected in the energy related strategic and legislative documents of the Czech Republic. The Updated State Energy Policy of the Czech Republic neglects energy services as a whole and so does the Second National Energy Efficiency Action Plan of the Czech Republic. However, one important milestone was the Resolution of the Government of the Czech Republic dated 19 October 2011, which stipulated, among others, drafting of a model EPC contract and a programme for renovation of public buildings. In 2011, ESCOs in the Czech Republic founded their “Association of energy services providers” (Asociace poskytovatelů energetických služeb, APES). APES has been very active since its foundation in supporting expansion of the Czech EPC market by attempts to remove the existing barriers. In 2012, based on a Resolution of the Government of the Czech Republic as well as on an APES initiative, several standard documents for EPCs were prepared. The documents are publicly available on the website of the Ministry of Industry and Trade. They include a revised version of Energy Performance Contract and detailed description of the process of EPC projects implementation including the procurement procedure in compliance with the public procurement law.

In Germany, the lack of clarification in the legal framework and governmental support is an identified issue for implementing EPC in Germany. The national energy legislative framework is incomplete and only limitedly supportive for EPC. Even though several subsidy programs are in place, an assessment carried out by BEA indicates that they currently play only a minor role for EPC in Germany. The analysis has shown that some programs are suitable for the use in EPC and some are not: the ‘Small CHP Program’, the ‘Market Incentive Program for Renewable Energy Sources’ and also the ‘KfW Program for Municipalities’ are applicable in EPC. Furthermore, there is no distinction between ESCOs and other applicants in the EEG and the KWK-G, so both programs are usable in EPC, too. The main problem in many other programs is that ESCOs are not allowed to perform the application for the program themselves - while they actually pay for the implementation of measures. Currently there is no program in Germany which directly supports the development of EPC projects. The public procurement legislation also hinders the development of the EPC market, being very extensive, detailed, not flexible in terms of new business models and non-supportive. However, quality standards as well as manuals and guidelines have been developed.

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In Austria, in March 2001, the Austrian Energy Agency (E.V.A.) initiatives led to a ministerial order, which laid the foundation for a “Federal Contracting Campaign (Bundescontracting Offensive)” encompassing around 300 federal buildings. It has gone through ups and downs but is still Austria’s largest EPC program. Also the city of Vienna’s department MA 34 has established “EPC as a financing model for energy savings in buildings” after having successfully tested eight pilot projects at the end of the 1990s. Its homepage lists 40 EPC projects currently running and 25 already terminated. The split incentives between landlords and tenants remain a big issue. While tenants profit from energy saving measures due lower energy bills, the landlord who pays the investment costs does not directly profits by this effects. A transfer of the costs toward the tenants is difficult and regulated in the tenancy law. In condominium buildings, where the several apartments are owned individually, it is very difficult to achieve an approval of all owners, as requested in the condominium law. A further barrier is, that many EPC projects depend on public subsidies or on the political will of the federal or local governments. Therefore it is difficult for ESCOs to plan the long term market strategy and their personal resources on this market segment.

In the UK, support from the government to the EPC industry has historically been weak. The EPC industry has largely been left on its own and had to rely on its own initiative(s) to grow and become successful. Recently however, several pieces of legislation have been passed to promote energy-efficiency improvements, in the midst of the climate change debates of the last 15 years or so. As a result, the main incentive was to reduce CO2 emissions; however, a few policies have also been introduced to facilitate the financing of energy-efficiency measures. Answers to the Transparense survey pointed out a double issue from a regulatory point of view: first the market may not fully understand – or be aware of – the regulatory tools at its disposal. Second, and despite the first point, it is still not fully appreciative of the government’s policy efforts and believes more could be done to help the EPC industry. Overall, it is clear that the relative lack of regulation leads to a diversity of fluctuating EPC models in the UK, with a lot of experimentation in the sector. It is interesting to note that some of the programs, frameworks or projects set up by government or local authority are starting to be fairly successful, like the RE:FIT program.

In Sweden, the previous Swedish support system “OFFROT” (2005-2009) was granting investment subsidies for energy efficiency improvement actions, up to 30% investment grant could be obtained. The subsidy boosted the EPC development and the termination of the subsidy clearly resulted in a drop in EPC demand.



## 5 Structural Features of the EU EPC market

The results of the Transparense survey have made it clear that most EU countries suffer from the same issues: the complexity of the EPC concept, the lack of trust in the EPC industry, low customer demand and split incentives between landlord and tenants. However, as this section shows, there are ways to promote the EPC concept and to disseminate best practice through pilot projects innovative procurement routes.

In Germany, energy end-users have limited information and technical, economic, financial and legal knowledge on EPC, resulting in low awareness and priority, notably at decision making level. Some potential customers have unrealistic expectations of energy and cost savings potentials and are disappointed when they face ESCO proposals not meeting these expectations. The information and knowledge shortfall is especially problematic in the public sector, considered to be a key trigger for the successful ESCO market development. All that leads to lower numbers of requests for EPC proposals put on the market. EPC facilitators are therefore essential to the development of the market. Best practice examples such as the 'Energy Saving Partnerships' in Berlin have outlined the advantages of EPC for more than 15 years. This partnership is a model for efficient energy saving contracting. The aim is to tap the potential for saving energy in a pool of buildings made up of different properties.

In Bulgaria, one of the major barriers to EPC (especially in the private sector) is the lack of trust in ESCOs. This barrier is interrelated to two other barriers - lack of standardised M&V practices and lack of customer demand. These call for standardisation, either in a regulatory manner or by establishment of a voluntary agreement (e.g. Code of Conduct).

Standardisation of M&V practices is available only in the building renovation projects. The high level of EPC transaction costs (tender procedure, determination of baseline, M&V, etc.) compared to simple contracts is an important obstacle in some sectors.

In Poland, a typical structural barrier is the lack of understanding of ESCO formula and of its benefits among the decision makers. It corresponds with complexity of the contracts and high transaction costs both for ESCO and possible customers. Recently some actions aiming at disseminating knowledge about EPC (e.g. establishing ESCO Club as a platform for exchange of experience for the stakeholders, or preparing standard stipulations of EPC contracts) were undertaken. A very similar situation exists in the Netherlands, where the demand from potential customers is very low. The same structural barriers are preventing the sector from expanding at the moment. The lack of transparent and neutral energy audits and/or of accepted standardised measurement and verification procedures is also problematic in that country. Despite this, a few successful EPC models have recently been created in the Netherlands: for example, in April 2011 the city of Rotterdam and the ESCO

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Strukton signed a ten years maintenance and energy performance contract for nine swimming pools.

In Portugal, complexity of the EPC concept and lack of information was again ranked as important barriers, together with lack of trust in the ESCO industry, both by ESCOs and Banks. Previous studies, surveys, expert interviews (Change Best, interviews with experts, media opinion articles, papers, etc.) showed similar results. Other important structural barriers are: lack of knowledge about EPC model; lack of trained personnel on EPCs; distrust about the EPC model. The public procurement of new energy projects is assumed the main driver for the growth in the EPC market in Portugal and, according to the Transparensense Survey, the government policy is also well ranked in the drivers for EPCs. An example of a successful EPC model is the Hotel Corinthia EPC which was established with very good results. Three intervention areas, which are responsible for 75% of the energy consumption of a typical European Hotel, such as the lighting system, the HVAC and the water heating, are responsible for 22% savings (final energy) achieved. The support of technical experts was crucial for the implementation of the project. Another technical arrangement that was crucial for the success of the project was the installation of an energy management system, that allow an independent energy use monitoring of various equipment's, making it easier to identify and eliminate the system inefficiencies and define new measures to improve the global performance. A best practices manual and specific training for operating personnel was also very positive, together with promoting energy savings amongst employees and guests.

In Slovenia, the main structural barriers have been identified as follows: no EPC implementing mechanism set; no EPC projects pipeline in the public sector; no design of calls for subsidies for cost effective deep renovation of public buildings introducing the EPC; no supportive environment for EPC in the residential sector; no support to EPC project facilitators. On the positive side, local energy agencies started to play the important role of EPC-Project Facilitators taking overall or partial responsibility for successful realisation of EPC-project activities at regional level (project/measures identification, energy audits, determination of targets, design of EPC-procedures, call for proposals, selection of bidders, monitoring, M&V, mediation, etc.), resulting in increased number and improved quality of EPC projects.

In the Czech Republic, with EPC within the public sector (property and buildings managed by the state, regions and municipalities), the barrier of split incentives often arises. It happens when the managers of the publicly owned facilities have limited access to the achieved savings on the energy bills, which tend to be taken by the owner - the local government or the state. Respondents in the Transparensense EPC Survey further mention the complexity of the whole EPC process and lack of information as an important structural barrier. The

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experience in several pilot projects, carried out in 2007 – 2013, has nevertheless shown that it is possible and moreover highly recommended to combine subsidized construction energy efficiency measures (insulation) with technology energy efficiency measures, which are carried out through EPC project.

In Austria, the lack of trust in the ESCO industry is still a major barrier. It originates from individual negative experiences in previous EPC projects. Sometimes customer prejudices as “The ESCO saves energy costs by reducing the user comfort” must be overcome. There is a lack of (affordable or/and qualified) market facilitators providing technical and legal support for clients during the tendering procedure. However, some successful structural models do exist: in the state Styria the “Graz Energy Agency” initiated a comprehensive EPC program under the brand name “Thermoprofit<sup>®</sup>” which introduced, among others, quality standards for ESCO projects, the foundation of a network of qualified ESCOs, their certification as well as project development and facilitation on behalf of potential ESCO customers.

In Latvia, when asked about the main barriers to EPC business, structural barriers were clearly an issue for most of the Transparense respondents: 100% of ESCOs and 100% of banks mentioned “customer demand”. “Complexity of the concept / lack of information” was also cited as one of the main barriers. Even though the percentage is slightly lower, the same structural barriers were identified as the most problematic in Sweden. In Spain, “lack of trust in the ESCO industry” as well as “customer demand” were the two most cited answers for structural barriers.

In Belgium, structural barriers are still prevalent: EPC is a rather unproven approach and the procurement of EPC-projects is complex and new and can be perceived as risky. The best way for removing the perceived risk is the demonstration of the positive effects of EPC via pilot projects. Unfortunately the first tangible results of the few existing Belgian EPC-projects - that are still in the phase of procurement - can only be expected after some years. Additionally, "Complexity of the concept / Lack of information" and/or "Complex accounting / book-keeping rules" were mentioned by all ESCOs surveyed as main barriers to the EPC business. However, successful structural models have also emerged: on demand of Fedesco, a team of experts developed a brand new and highly innovative Belgian EPC-contract that meets all of Fedesco's requirements, and in general those of the Belgian market. The contract – branded as 'smartEPC' by Fedesco - combines the best ingredients of existing foreign EPC contracts with some innovative features. For example, the ESCO will not only be remunerated (or fined) based on the energy savings but also based on the comfort and maintenance performance. A user-friendly EPC-manual was also developed to guide clients and EPC-facilitators through the whole process of the procurement and follow-up of an EPC-project.

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In the UK, structural barriers were clearly an issue for most of the Transparensense respondents: 40% of ESCOs and 100% of banks mentioned “customer demand”, proving that the demand for EPC projects is still much too low for the industry to be a widely profitable sector. An even bigger 80% of ESCOs and 100% of banks chose “complexity of the concept / lack of information” as one of the main barriers, showing that the EPC concept is still far from being understood or communicated effectively to all potential customers. The EPC model remains complex, diverse and complicated, with high transaction costs both for the ESCOs and the customers. However, there is another side to that coin: the lack of standardisation creates diversity, flexibility and adaptability within the EPC industry in the UK. The EPC contract is very fluid and designed on a case by case basis. The UK EPC industry has somehow benefited from not being too standardised yet. It seems reasonable to suggest that the recent growth of the market may be linked to that level of flexibility offered by EPC providers, in a truly bottom-up fashion. The results from the survey also confirm that savings verification in general, and M&V and IPMVP in particular, are indeed an essential element of a successful EPC in the UK.

As in many countries, the complexity of the EPC concept / offering is a clear issue in Hungary. Additionally, ESCOs usually carry out the baseline establishment and monitoring of the savings themselves, which on one hand increases their transaction costs, on the other hand makes clients distrust the results. This often leads to misunderstandings and arguments during project implementation and payments. A similar issue prevails in Greece, where baseline data is scarcely available and the lack of transparent proof of performance is a real problem. As a result, typically neither the ESCO nor the client is convinced that the estimations made (as it remains the only way) are completely correct.

In Denmark, complexity of the EPC concept and lack of trust in the ESCO industry were also identified as two major structural barriers by the Transparensense survey, as for most EU countries. In relation to the complexity of contracts the Danish Association of Building Automation - Danish Chamber of Commerce, issued an ESCO guideline at the beginning of 2013 (based on experience from the first Danish projects). One major issue in these guidelines is a need for flexibility for EPC contracts. Transaction costs is another barrier particularly if the saving potential is low and/ the project size is small. On the other hand, EPC with guaranteed savings has been the most common/successful contract approach. The most notable development may be the increasing length of the contract, up to 20 years, and the associated increasing project size based on bundling of several buildings.

Italy is a bit of an exception, as Italian respondents actually do not consider structural barriers as the most important barriers, especially if compared to Regulatory and Administrative barriers. When asked about the main barriers to EPC business, structural barriers were not an issue for most of the respondents: only 23% of ESCOs chose

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“complexity of the concept / lack of information” as one of the main barriers, showing that the EPC concept is almost understood or communicated effectively to all potential customers. In several pilot projects it has been seen that an important success factor is to combine all the green/energy efficiency equipment and envelope measures in an integrated process to maximize opportunities for integrated, cost-effective adoption of green operation and maintenance strategies using innovative approaches and techniques.

## 6 Financial Features of the EU EPC market

Obtaining finance to fund an EPC project is, rather unsurprisingly, a major stumbling block for EPC providers and/or EPC customers across the EU. As the next section shows, most respondents to the survey mentioned it as a major barrier to EPC business. The financial crisis also had negative consequences on the industry, making it more difficult to borrow money with more stringent requirements from the finance houses. Interestingly enough, the financial crisis is also mentioned as a driver for a third of the respondents, which shows that the necessity to reduce costs can also be a powerful force to drive the EPC agenda. Finally, it is clear that finance houses and banks in the majority of the EU countries surveyed still struggle to provide adequate finance for EPC projects due to a lack of knowledge on the characteristics of such projects.

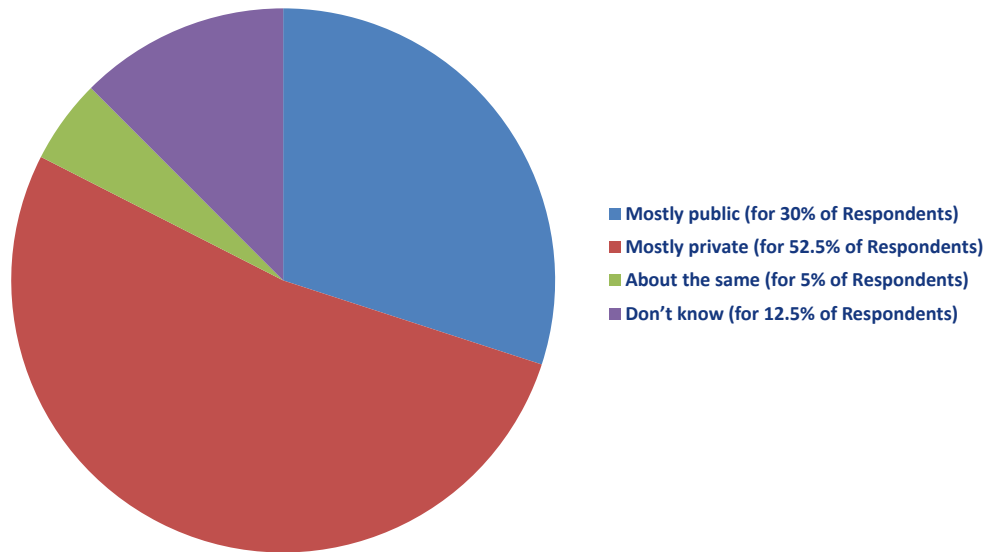
As an introduction to this section, the next two charts show the trends at EU level using data from the banks / finance houses survey. They show that clients requesting finance from them are mostly private; and that the amount financed per EPC project is almost equally distributed between small and large projects. The table after the charts lists a series of criteria that banks had to classify from “irrelevant” to “critical” for their decision to finance (or not) an EPC project. The answer with the highest percentage for each criterion is shown in bold and highlighted.

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Figure 14: Provenance of Clients requesting funding for EPCs

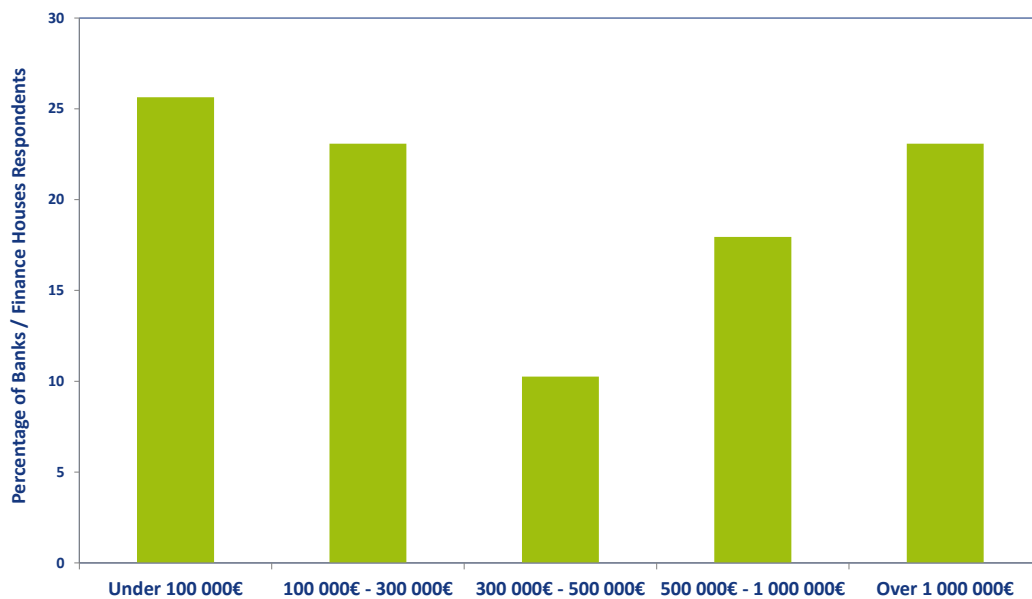
**Transparense Survey (October 2013)**  
**Provenance of Clients requesting funding for EPCs**



Source: Transparense EPC Survey (2013)

Figure 15: Typical Amount financed per EPC

**Transparense Survey (October 2013)**  
**Typical amount financed per EPC**



Source: Transparense EPC Survey (2013)

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Figure 16: Importance of Different Criteria in the bank's decision to finance an EPC project

	Irrelevant	Moderately important	Very important	Critical
The Client / ESCO's tax status	20.0	42.9	22.9	14.3
History and ownership of the Client / ESCO	5.7	17.1	51.4	25.7
Business prospects of the Client / ESCO	11.4	5.7	74.3	8.6
Financial condition & creditworthiness of the Client / ESCO	5.7	2.9	48.6	42.9
Audit of the project	2.9	17.1	68.6	11.4
Size and track record of the ESCO	5.7	22.9	65.7	5.7
Type of equipment to be installed	17.1	40.0	40.0	2.9
Accuracy of the savings verification	5.7	28.6	48.6	17.1
Length of the project	2.9	57.1	31.4	8.6
ROI / internal rate of return	5.7	25.7	51.4	17.1
Sector / Branch in which the client operates	5.7	45.7	40.0	8.6

Source: Transparense EPC Survey (2013)

In Germany, a common problem for customers is long payback times and relatively low internal rates of return. Another barrier is strong competition between EPC investments and core business related investments, with payback times of 3-5 years, resulting in low priority of EPC investments. EPC providers on the other hand, since they usually provide upfront investment costs placed on the asset side of their balance sheets, for instance as financial fixed assets, their credit risk rating can be affected and limit their capacity to implement new projects. Smaller ESCOs without support of a larger parent company and without appropriate credit ratings are especially vulnerable, being not in a position to attract third-party financing. For commercial banks, an EPC is still perceived as a high risk project. They are still very cautious, and the project size, financial strength of the ESCO and creditworthiness of the building owner can be clear barriers to obtaining funding. The commonly used instrument today for re-financing (hardware costs) by the ESCO is factoring (in Europe: forfeiting). Forfeiting is the, in the case of EPC, long-term sale of (future) receivables: when a bank loans money through a forfeiting mechanism, the bank wires Euros



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to the ESCO at the time of completion of the project set-up, i.e. when the equipment has been installed. The customer makes periodic fixed payments to the bank.

In Bulgaria, the survey results indicate that the access to financing from banks is a serious problem for ESCOs. According to the respondents, only few banks are ready to finance EPC and the financing conditions are quite unfavourable. One of the reasons for this problem is the high amount of required financing – typically from several hundreds of thousands to several millions euro. Banks are not prepared to finance projects on the basis of receivables from EPC (project financing), meaning that only ESCOs able to provide substantial collateral have the capability to raise finance. This problem, highlighted in previous studies still exists. A positive financing model is the Bulgarian Energy Efficiency and Renewable Fund (EERSF), established through the Energy Efficiency Act in 2004. Among the other financial products, the Fund offers portfolio guarantee for ESCOs. Through this innovative product, the Fund guarantees the first 5% of defaults in the portfolio of projects. In that way, by undertaking some risk, EERSF helps ESCOs to guarantee the receivables from their clients. This guarantee is an instrument of average financial risk and un-collateralized, thus appropriate also for new ESCOs.

In Poland one of the most significant barriers indicated by respondents is the difficulty to get financing for project implementation. The Polish financial institutions are not prepared for financing EPC contract where debt service is provided not by cash flow generated by the project but by savings resulting in costs reduction. The banks are reluctant to provide long term forfaiting or factoring of EPC receivables which caused some liquidity problems and prevents ESCO from financing more projects to due exceeding debt/equity ratio.

Similarly, in Greece, the financial institutions are not familiar with the concept of ESCO projects, thus they provide conservative lending practices, resulting this way in the lack of commercially viable project financing. Also, FIs perceive EE projects (incorrectly) as inherently more risky than other investments. Consequently, specific financial schemes, and procedures have not been developed, due to the not yet active market. So there is limited access to capital. Due to the immaturity of the EE market in Greece, costs of project development are relatively high, and most small ESCOs find it difficult to finance project development costs.

In Slovakia, the main financial barrier on the side of potential clients (building/energy systems owners) remains access to capital or initial cost of a project in particular in projects which require own financing or co-financing or additional fee to be paid by building owner to an ESCO. For the public sector, one of the main problems is that the formally binding budgets are approved on yearly basis, and thus it is difficult for public organizations to enter into contract lasting more than a year. Several banks have established specialized

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departments responsible for energy-related projects. These departments are usually staffed with financially well educated and experienced staff, but with lack of information on technical aspects of the projects. As the banks are very risk averse (partially due to the global financial crisis), this leads to very difficult negotiations on content of all contracts necessary for EPC projects realization. But with growing experience of the bank staff with projects of this kind, the situation is improving. Still energy savings in the building sector are not considered a secure source of income by the banking and financial sector. General barriers which lead to reluctance of banks to provide EPC loans are valid also for Slovakia: risk exposure, long payback time, lack of standardised procedures and lack of awareness.

In the Netherlands, when ESCOs provide the upfront investment cost, the expenditure is placed on the asset side of its balance sheet, for instance as financial fixed assets. In theory, this way, an ESCO can fund an infinite amount of projects but in practice it cannot. When the amount of ESCO-activity related assets on the balance sheet is becoming significant, this can influence the credit risk rating of a company. It also means that the ESCO has to choose how to spend its available cash; in core-business related investments or in financing ESCO activities, which limits its potential for EPC business. Off-balance sheet financing remains very limited in that country. As in most of the EU, limited knowledge and experience of financing institutions is also an often mentioned barrier.

In Spain, the financial crisis also heavily affected investments in EPCs. Public institutions have small finance capability to invest in refurbishment of buildings, replacement of old heating equipments, street lighting, etc. In both the private and the public sector, financing by banks through loans is necessary. However it remains very difficult to obtain these loans with favourable conditions. Despite these obvious issues, some funds and grant programmes are available: Jessica Fidae Fund, Green Buildings Equity Funds 1, ICO Financial Line, Biomcasa II Solcasa II GIT Casa, and Pimasol. Energy Efficiency assurances are also a new development in Spain and may help customers and EPC providers obtain financing more easily.

In Portugal, the main constraint ESCOs are facing nowadays is also financing. The economic crisis does affect EPC business. On one side the national banks lack funds and on the other side, international banks are not interested to be associated to the Portuguese risk. Moreover, Portuguese financing institutions also need to have a better knowledge about the financing typologies and contracts, as well as about the technologies to be installed, in order to facilitate more adequate leasing contracts, similar to micro-project finance

As in most other countries, the increasing difficulties of raising affordable finance are a major issue in Austria. During the last years financing institutes became tighter in proving the credit standing of the recipients. Considering a comprehensive energetic retrofitting (including thermal insulation of the building shell), the refinancing of the investments by

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energy cost savings is rarely possible. In most cases the joint implementation of commercially viable measures, e.g. HVACR (Heating, Ventilation, Air Condition and Refrigeration) and measures with long pay back periods (building insulation) is the best option from the environmental as from the macroeconomic point of view. An example of successful financing can be found in the state Upper Austria (Oberösterreich), with a funding model to support energy contracting projects (EPC and Supply contracting). The fund is managed by the OÖ Energiesparverband.

In Latvia, funding for EPC projects and more generally energy efficiency investments originate mainly as debt financing from commercial banks with equity from private investors. Energy efficiency projects are then also supported with structural funds or by climate change mechanism (Latvian green investment scheme). Currently specialist funds are missing financial mechanism in the country. Rotating Fund is discussed as a potential financial instrument. This fund capital may consist of co-financing from the State and its local governments, institutional funds, and in some cases financing by the European Union structural funds.

In Belgium, it is important to note that the investment resources of public authorities will significantly decrease in the next years. Scarce investment resources will see EPC compete with other (more “core”) investments. Because of the financial constructions in the past, payments in the frame of long term agreements are considered more and more as 'de facto' loans by the controlling (European) financial authorities. Thus - in the worst case, according to some international EPC-experts, the (actualized value of) all payments towards an ESCO in the frame of an EPC-project could be considered as a loan. Consequently an EPC-project, certainly if the contract includes the overall non-energy related maintenance of the building, could increase on the short term significantly the debt of a government, which will be perceived as a major disadvantage for political decision makers.

In Slovenia, the financing situation partially changed with the introduction of energy efficiency saving obligation scheme fully operational since 2012 which provided subsidy financing for the EPC projects. A result of this measure was significant increase of range of implemented EPC projects, in terms of number (more than 15 projects/year) and investment volume (more than €3 million/year). Due to the financial crisis in Slovenia, identified by ESCOs as main driver of the EPC business, **Error! Reference source not found.** local financing institutions (LFIs) have become even more rigid about the potential risks of EPC projects. A lack of access to funds at LFIs and constantly increasing demand for EPC debt financing indicate a need for introduction of EPC dedicated credit line by a public entity (such as Eco fund), in order to provide low-interest loans, even for smaller projects. The EESI “EPC plus” model which extends the service of the ESCO to comprehensive structural measures on the building envelope like insulation or window replacement was recognised by national

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cohesion funding programmers as an highly efficient tool to multiply gains (energy savings up to 50%) in the next financing perspective 2014-2016.

In the Czech Republic, most ESCO respondents to the Transparense survey find obtaining workable finance for a good/viable project easy and believe they are able to obtain commercially viable terms and rates of interest from funders quite easily when setting up EPCs. Therefore, ESCOs do not consider the scale of finance required to set up an EPC as an obstacle. Having said that, it is also perceived that one of the risks in public sector organizations is the level of their indebtedness. If it is too high, it may decrease their willingness and ability of the municipalities to take new long-term liabilities, such as EPC (even though it actually saves public money). In the last few years, the ESCOs in the Czech Republic have started to use sale of claims (i.e. factoring) to finance the EPC projects. The preparatory phase of the project as well as installation of the measures is financed by the ESCOs. Once the technologies and energy efficiency measures are handed over to the customer, the receivable is assigned to a third party – the bank. This allows ESCOs to enter other large EPC projects and keep their level of indebtedness on a low (acceptable) level. At the same time, it brings no changes to the EPC contract and guarantee of savings by the ESCO remain unchanged.

In Italy, as described in other European national reports, the financial crisis (and subsequent economic recession) in recent years is seen both as a barrier and as an opportunity or even a success factor by the ESCOs. It is also perceived that one of the risks in public sector organizations is the level of their indebtedness. If it is too high, it may decrease their willingness and ability of the municipalities to take new long-term liabilities, such as EPC (even though it actually saves public money). In the survey, ESCO respondents made it clear that obtaining commercially viable terms and rates of interest from funders is quite difficult or even very difficult when setting up EPCs. One important tool that could really help the development of EPCs is TPF (Third Party Financing, “Finanziamento Tramite Terzi”) already considered in Directive 93/76/EC, in Directive 2006/32/EC and by the Action Plan for Energy Efficiency, as well as predicted by several Italian country energy plans.

In the UK, 30% and 40% of ESCO respondents mentioned “raising affordable finance” and “complex accounting” respectively as a main barrier to EPC business. Two thirds of banks mentioned these two barriers. The financial crisis was also deemed to be a main barrier for the further development of the EPC industry by 30% of ESCO respondents. The relatively small number of finance houses willing to finance EPC projects as well as the drastic requirements they sometimes set before providing finance can be a deterrent for ESCOs and their customers. However, this does not necessarily mean that this is always the case. 89% of ESCO respondents are “always” or “in a majority of cases” able to obtain commercially viable terms and rates of interest from finance houses when setting up EPCs. This may be due to

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the fact that a lot of the respondents also saw financial matters as main drivers for the EPC industry: Increasing energy prices (70% of ESCO and 100% of bank respondents) and pressure to reduce costs for customers (70% of ESCO and 66% of bank respondents) are clearly seen as positive elements.

In Hungary, one of the greatest obstacles for energy efficiency investment decisions in the private sector is the postponement of state funds. The problem is not the lack of subsidies in the case of ESCO projects, but rather the expectations on the part of the clients, based on promises from the central and local governments that financial incentives may be introduced or reinstated. Therefore, in hope of a larger profit, building owners delay decisions and the start of their investments. On the side of the clients, the lack of off-balance sheet solutions means one of the key barriers to EPC projects because the size and number of implemented projects are limited. From the banks' point of view, they have seen special taxes in recent years and had to participate in the municipal compensation solution, thus the banks are more careful and afraid of new portfolios. Those that have an ESCO product require documents and guarantees that are almost impossible to provide for the clients. Therefore, ESCO projects are typically financed by the ESCOs or by the client from internal funds.

In Lithuania, the financial crisis (from end of 2008) has had a very negative impact on the development of new EPC projects. The economic downturn made potential ESCO clients more unstable, reducing their activity, increasing the difficulty in ensuring energy saving and raising the risk of insolvency. It also made it more difficult to receive loan from banks due to the higher access to loan, higher interest rates. Banks need stronger securities, substantially reducing the availability of providers to engage in long term (15-20 years) contracts. However, on the other hand, the financial crisis and economic restrictions had a positive impact. It made potential customers focus on achieving cost for energy reduction through energy efficiency measures and taking advantage of the flexible financing mechanisms offered by ESCOs.

In Denmark, until now financing of ESCO investments has not been a real barrier, as the projects have been almost exclusively financed by the client through favorable Government guaranteed loans, creating general favourable financing conditions for municipalities. In addition to the availability of soft loans, municipalities have been exempted from budget limitations in relation to energy renovations. According to new agreements, however, this limitation is being put back, and could result in a possible draw-back for ESCO/EPC projects and larger energy-renovation projects in general.

## 7 Conclusion: Main Drivers / Barriers for the development of the EU EPC Market

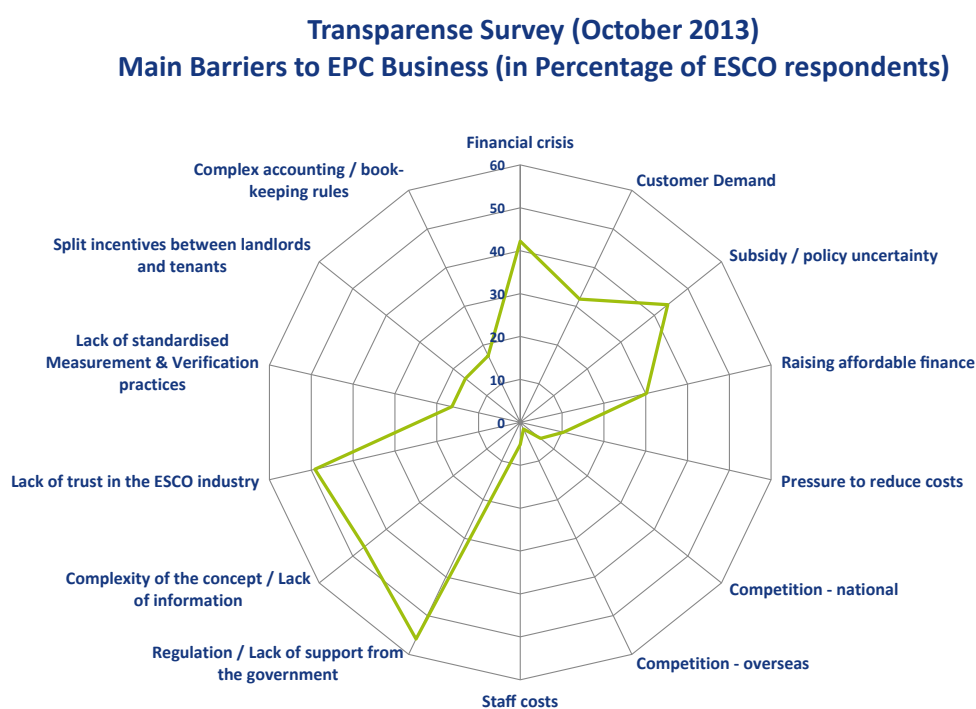
Drawing on the cross-country comparisons detailed in the previous three sections, this final section summarises the main barriers and drivers for the EPC business at the aggregated EU level, as revealed by the respondents to the ESCO Transparensense survey.

As illustrated in the previous sections, the main barriers are as follows: regulatory (“regulation / lack of support from the government”, “subsidy / policy uncertainty”); structural (“lack of trust in the ESCO industry”, “complexity of the concept / lack of information”) and financial (“financial crisis”, “raising affordable finance”).

It is interesting to note that staff cost or competition (national or overseas) do not seem to be a problem at all for the European EPC industry.

The main drivers, on the other hand, are overwhelmingly financial, with “increasing energy prices” and “pressure to reduce costs” the two most chosen responses. “Government policy”, “customer demand” and “financial crisis” are also popular answers.

Figure 17: Main Barriers to EPC Business



Source: Transparensense EPC Survey (2013)

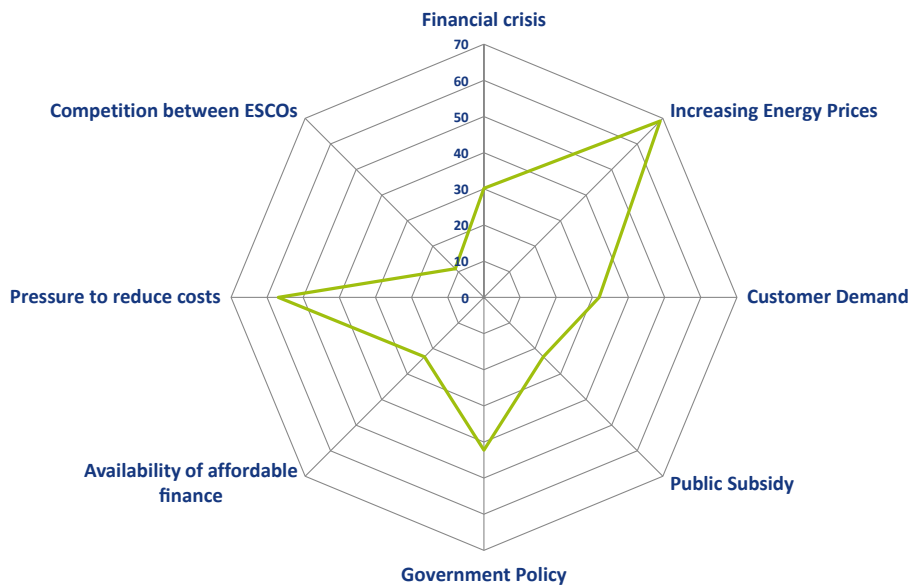
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Figure 18: Main Drivers for EPC Business

**Transparensense Survey (October 2013)**  
**Main Drivers for EPC Business (in Percentage of ESCO respondents)**



Source: Transparensense EPC Survey (2013)

## Definitions and glossary

Term	Definition
<b>energy efficiency (EE)</b>	means the ratio of output of performance, service, goods or energy, to input of energy (as defined by EED)
<b>energy efficiency improvement</b>	means increase in energy efficiency as a result of technological, behavioural and/or economic changes (as defined in EN 15900:2010)
<b>energy management system</b>	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)
<b>energy savings</b>	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)
<b>final energy consumption</b>	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)
<b>guarantee of energy efficiency improvement</b>	means commitment of the service provider to achieve a quantified energy efficiency improvement (as defined in EN 15900:2010)
<b>energy performance contracting (EPC)</b>	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)
<b>EPC provider</b>	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
<b>energy service provider /energy service company (ESCO)</b>	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)



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#### 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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