



## D2.4 Country Report on Identified Barriers and Success Factors for EPC Project Implementation

Italy



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



### **Transparensense project**

This document has been conducted within the framework of project “Transparensense – Increasing Transparency of Energy Service Markets” supported by the EU program “Intelligent Energy Europe”

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

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October 2013

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for EPC implementation in the United Kingdom**



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### Abbreviations

BEEP: Buildings Energy Efficiency Programme  
CEM: Contract Energy Management  
CRC: Carbon Reduction Commitment  
ECA: Enhanced Capital Allowance  
EEEF: European Energy Efficiency Fund  
EED: Energy Efficiency Directive  
EESI: European Energy Service Initiative  
EMA: Energy Managers Association  
EPC: Energy Performance Contract  
ESCO: Energy Service Company  
ESTA: Energy Services and Technology Association  
FM: Facilities Management  
JRC-IE: Joint Research Centre – Institute for Energy  
LEEF: London Energy Efficiency Fund  
NHS: National Health Service  
PFI: Private Finance Initiative  
ITA: Italy

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### 1 Summary

The present report aims at providing an overview of the existing EPC market in Italy.

The report focuses on identified barriers and success factors for the implementation of EPC projects.

The 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>.

The survey was sent and communicated to all the major ESCOs and associations in Italy, through direct meetings, phone conversations and/or emails. The survey was filled in by 19 of them, and 13 of them have answered to all the questions.

Financial, institutional, and organizational barriers were outlined in these years from the market and in several researches and EU projects. However, these barriers remain and in this difficult moment for Italy some of them appear to be far from a quick resolution: late payments and insufficient capitalisation; regulation and standards that are not efficient, a procedural deficiency, etc. are some of the relevant barriers that appear to be the most important according to the respondents. This is often linked to a lack of support from the Italian government and/or public agencies.

In this report there will be several figures that helps to show and highlight some important aspects for the Italian EPC market state of art.

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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://publications.jrc.ec.europa.eu/repository/bitstream/111111111/15108/1/jrc59863%20real%20final%20esco%20report%202010.pdf>

<sup>4</sup>[http://www.autorita.energia.it/allegati/relaz\\_ann/12/C12\\_NR\\_Italy-EN.pdf](http://www.autorita.energia.it/allegati/relaz_ann/12/C12_NR_Italy-EN.pdf)

# Report on identified barriers and success factors for EPC implementation in Italy



## 2 Introduction

### 2.1 Methodology

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

- the results of a nation-wide EPC survey which was sent to the country's main actors within the EPC market.
- the market knowledge of the authors, as well as research from local / national literature (publications and studies, legislation documents, official statistics and databases)

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

The survey was sent and communicated to all the major ESCOs and associations in Italy, through direct meetings, phone conversations and/or emails. The survey was filled in by 19 of them, and 13 of them have answered to all the questions (statistics below refer to these respondents). Almost two thirds of the respondents consider their company as ESCOs, while the remaining percentage are energy consultants, equipment installer, and energy agency.

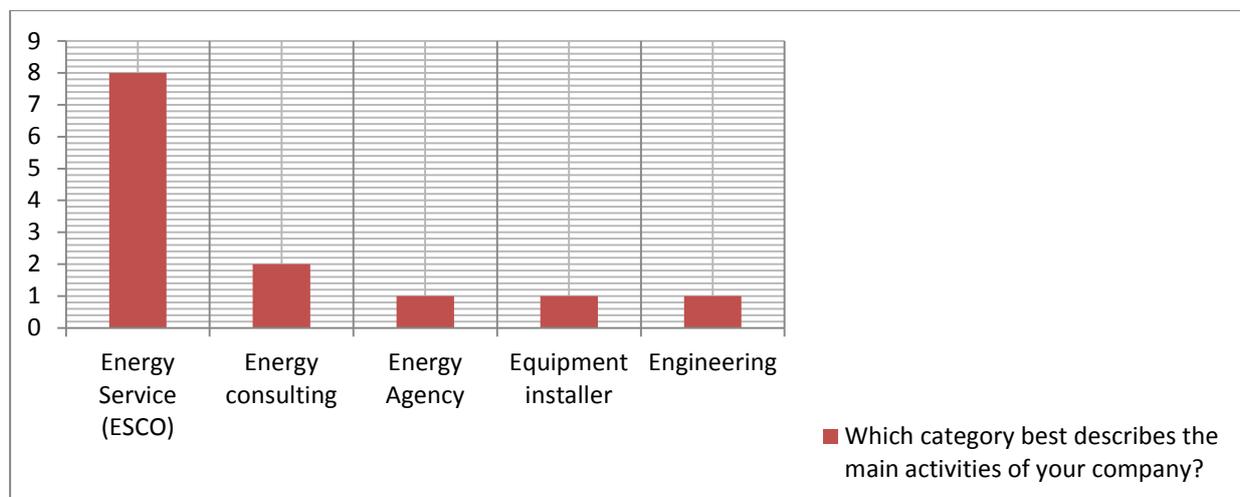


Fig 1. Respondents categories (Transparensense survey).

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A slightly different survey, modified for a different target audience (banks and finance houses) was also sent to the major banks and financiers in Italy. Unfortunately no answers were received by banks and finance houses, especially for two major factors:

- “corporate ladder”: local and regional branches did not answer directly to the questionnaire since many answers were not completely known and all branches must report questions to their experts in the corporate headquarters.
- many questions were considered “confidential”.

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

### 2.1 What is Energy Performance Contracting

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

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

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

Energy Performance Contracting allows facility owners and managers to upgrade ageing and inefficient assets while recovering capital required for the upgrade directly from the energy

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savings guaranteed by the ESCO. The ESCO takes the technical risk and guarantees the savings.

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

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

### 2.2 Definition of EPC and EPC provider

While there is 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>4</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, the focus will be given to the EPC projects, where the above mentioned “contractually agreed level of energy efficiency improvement” is **guaranteed** by the EPC provider<sup>5</sup>. This is in line with the EED, as in its Annex XIII, **guaranteed savings**<sup>6</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:

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<sup>4</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>5</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>6</sup> Annex XIII of the EED lists the minimum item as: „Guaranteed savings to be achieved by implementing the measures of the contract.“

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“ **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.

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### 3 The EPC market in Italy: an introduction

The EPC market in Italy can be considered well developed, in the sense that the EPC as a business model has been alive for decades. However, as also outlined in the “National Report on the Energy Efficiency Service Business in Italy”<sup>7</sup> (ChangeBest project), *“in Italy, the market for energy efficiency services has developed following an uneven pattern (...)”*.

Data from the Transparense survey indicates that 62% of the ESCO respondents believe that the market for EPCs in Italy had seen a growth since 2010 (16% of the total respondents believe that market is in major growth, while 46% of the total respondents believe it is in slight growth). The remaining respondents believe that the market has either seen little changes (31%), and 7% of the respondents showed an opposing trend to the other respondents noting a slight decline.

This percentages does not perfectly reflect EPC orders, since only 50% of the respondents confirm that their EPC orders were slightly increasing, while the rest of the respondents indicate that their orders remained constant (25%) or even slightly falling (25%). Furthermore, 70% of the people who answered had started between 1 and 5 EPC projects over the last 2 years, and almost 23% between 11 and 20.

In terms of the sector from which their clients come from, it is interesting to note that both private and public sector are active, since respondents stated that their clients are a “mixture of both”, with just a slightly bigger share of private clients, and that 32% of the respondents have contracts also with foreign clients.

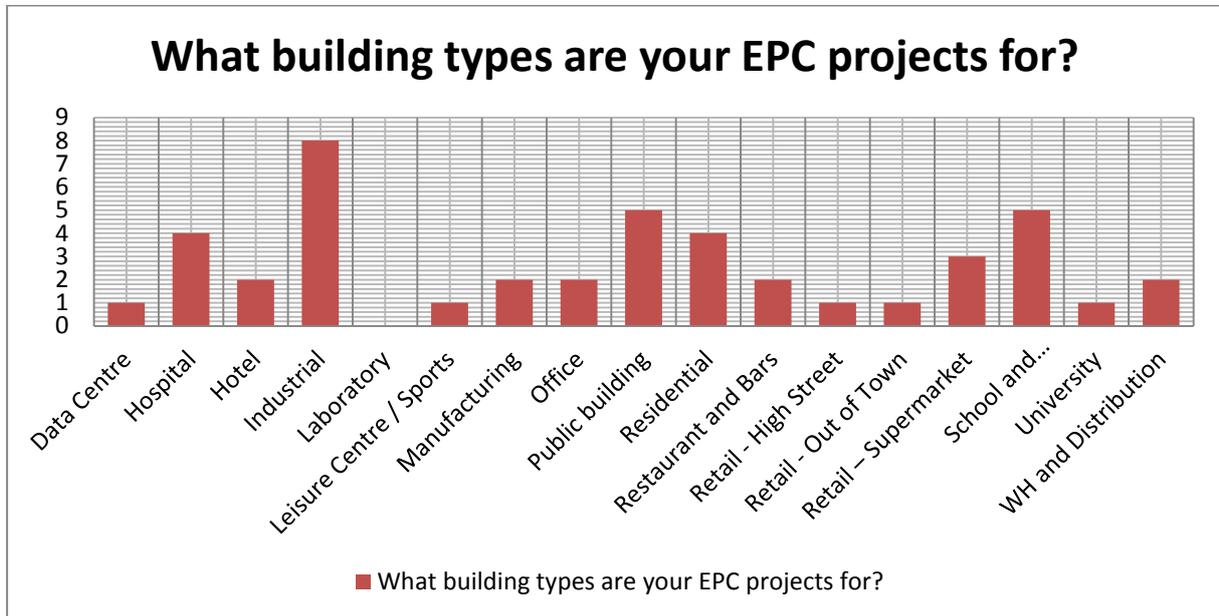
The employees of the ESCOs employed in this field are 0-10 for almost all of the respondents (some respondents state that the staff employed is almost 50 people). This confirms that there is still a split between large energy supply or Facilities Management companies and smaller-sized ESCOs.

The building types at which EPCs were being carried out also appear slightly vary between respondents, which can be seen as another testimony of the expansion of the EPC contract. The graph below shows which building types are interested by EPC projects carried on by Italian respondents.

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<sup>7</sup> [http://www.changebest.eu/images/stories/deliverables/national\\_report/task2\\_1\\_italy\\_final.pdf](http://www.changebest.eu/images/stories/deliverables/national_report/task2_1_italy_final.pdf), September 2009

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**Fig 2.** Building types are interested by EPC projects carried on by Italian respondents (Transparense survey).

A typical EPC addresses both energy efficiency and quality improvement measures, even if most of the respondents notes energy efficiency only, and lasts between 5-10 years.

Typical annual energy saving are below 30% (most of the respondents note as between 5-15%) and 7% of the respondents note savings between 31-50%.

The most common overall value (investment outlay) of EPC projects is between 200k-500k euros for 50% of the respondents, while about 30% communicates contracts between 500k and 1M euros and 20% less than 200k euros. Typically, the length and value of the contract are on the increase when compared with studies from the last 5-10 years.

## **4 Legislative framework - synthesis**

Energy Service Companies (ESCOs) started operating in Italy in late 1980s. Most of the first projects consisted of the setting up of cogeneration plants in hospitals. Usually the contracts required the suppliers to perform technological improvements and to manage the systems over the course of several years and were financed by third parties.

After two decades, the key element that contributed to the spread of ESCOs in Italy was the introduction of “white certificates”. On April 24<sup>th</sup>, 2001 a ministerial decree introduced the “white certificate mechanism” whereby a number of gas and electricity distributors were obliged to achieve a certain level of energy savings every year. This ministerial decree was later repealed and replaced in July 2004 with two decrees (called “twin-decrees”) that requires to reach end-user energy saving targets through the issue of Energy Efficiency Certificates (Certificati Bianchi) to entities that perform energy saving projects.

Currently, this mechanism is still in place and it is one of the main energy policy instruments that helps the Italian EES market to spread.

In 2005 ESCOs in Italy were about 150, but in 2006 a new law that limited and restricted requirements to become an ESCO brought the number down to about 75 ESCOs. Recently requirements for being an ESCO are set by Italian standard CEI 11352.

D.Lgs n.115 (May 30, 2008) is the key standard for ESCO in Italy. It is the Italian adoption of EU Directive 2006/32/CE: in this standard (follows “Decree”), issues such as instruments for energy efficiency (coordination and monitoring, incentives and financial instruments, simplification and removal of regulatory barriers, public sector issues, etc.) have been introduced.

The public sector plays a key role in this Decree since:

- a new role is assigned to ENEA (Agenzia nazionale per le nuove tecnologie, l’energia e lo sviluppo economico sostenibile),
- adoption of measures that regulate National (State) and Regional (Regions) functions regarding energy efficiency measures,
- the establishment of a series of simplified operations in building and renewable energy sources.

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A new Decree, called Terzo Pacchetto Energia was implemented in Italy by Legislative Decree no. 93/11. Among the innovative measures introduced by the legislative decree the most relevant concerned:

- the definition of a national energy policy,
- public service obligations and consumer protection,
- duties and powers of the Authority<sup>8</sup>.

Recently, a new decree (December 28, 2012) set new national targets for the years 2013-2016 in terms of energy savings for electric and gas distribution's companies referring to White Certificates.

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<sup>8</sup> [http://www.autorita.energia.it/allegati/relaz\\_ann/12/C12\\_NR\\_Italy-EN.pdf](http://www.autorita.energia.it/allegati/relaz_ann/12/C12_NR_Italy-EN.pdf)

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### 5 Identified Barriers

An ENEA and FIRE-Italia study report from 2012<sup>9</sup> identified the main barriers to EPC projects as divided in three sectors:

- i. Financial: late payments and insufficient capitalisation;
- ii. Institutional: regulation and standards it is not efficient, and it appears to be more a constraint than an incitement;
- iii. Organizational: Sometimes it is noted a procedural deficiency.

This section builds on these findings using updated information (notably from the Transparense survey) in order to show the areas that remain arguably the most problematic for the EPC industry in 2013.

#### 5.1 Regulatory and administrative barriers

This part exposes which elements of the regulatory framework are proving to be an obstacle for the development of successful EPC projects.

The Transparense survey made it clear that respondents are not generally satisfied (about 90%) with the government support for EPC policy (when asked how they judge your government's policies in supporting the development of EPCs in the country). This is a trend noted in different study reports and it is often noted that more could be done to help the EPC industry at a government/institutional level. This is not always true for energy efficiency, since the percentage of unsatisfied companies decrease to about 50%.

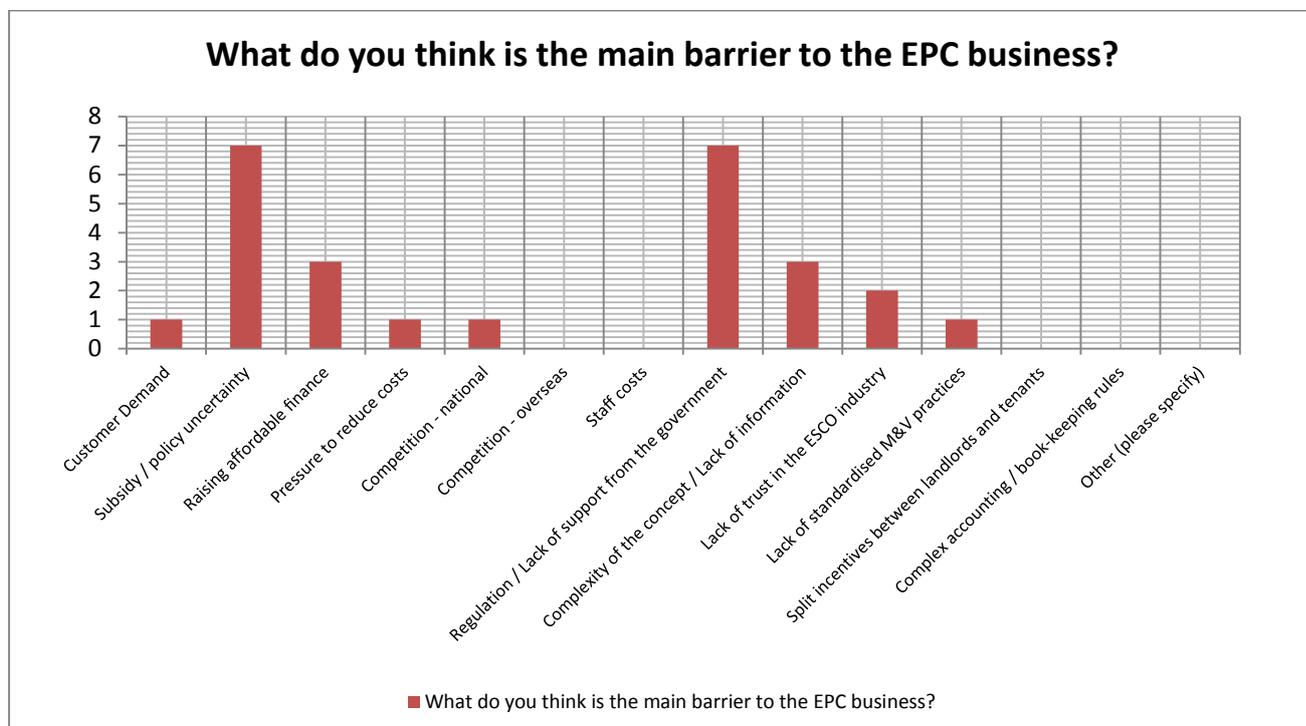
The result is quite clear: respondents call for higher support from the government in terms of policies, financial incentives and subsidy programmes, thinking that this is a *major* barrier to the expansion of the ESCO industry.

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 (see the graph below).

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<sup>9</sup> [http://www.fire-italia.it/rds/2012-11\\_ESCO\\_ENEA\\_Sum\\_DEFINITIVO.pdf](http://www.fire-italia.it/rds/2012-11_ESCO_ENEA_Sum_DEFINITIVO.pdf)

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**Fig 3.** Main Barriers to the EPC business carried on by Italian respondents (Transparensense survey).

### 5.2 Structural barriers

Italian respondents actually do not consider structural barriers as one of 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 clearly an issue for most of the respondents: For only 23% of ESCOs chose “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.

ENEA and FIRE-Italia study report from 2012 cited above identifies the following structural barriers:

- Some interventions are too complicated because of bureaucratic obstacles (amongst these: authorizations to construct and operate, connections to the energy networks, ...). This constitutes a fixed cost without bringing real benefits and protections;
- Decree 115/2008 defines a maximum contract duration of 10 years. This constitutes a limit since this timeframe often appears to be not sufficient;
- Lack of state support and strategic framework on EPC development;

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- Internal public personnel are not often instructed and cannot manage properly energy tenders or bids;
- Lack of awareness in the management of buildings.

### 5.3 Financial barriers

In the survey, it is really interesting to note how ESCOs have really opposite ideas when we requested them if it is easy to find the obtaining workable finance for a good/viable project. Instead ESCOs are quite compact when they state that obtaining commercially viable terms and rates of interest from funders is quite difficult or even very difficult when setting up EPCs.

Both from the ESCO perspective and from the EPC clients point of view there are several barriers that we briefly summarize below:

- **Financial crisis and high level of indebtedness** (highlighted both by ESCOs and EPC clients):

*In Italy, as described in other European national reports, 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).*

- **Late payments and insufficient capitalisation** (highlighted by ESCOs vs public administrations):

*Public administration, for internal procedures and/or high bureaucracy, pay too late in time. Time exposition is difficult to be sustained by ESCOs, especially if these ESCOs are implementing more than one project per period. This problem appear to be related more to public clients than to private clients.*

- **Bank investments and loans** (highlighted by small/medium ESCOs):

*Banks appear to have not still known the potential of Energy Efficiency investments, and small/medium ESCOs have often difficulties to access to bank loans.*

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### - **Financial Risks** (highlighted by ESCOs):

*ESCOs should not take upon themselves 100% of financial risks. Customers or clients should provide support to ESCOs. In this way, ESCOs could work more on technical aspects than on financial issues.*

### - **Long-pay back periods for certain types of retrofit works** (highlighted by EPC Clients and ESCOs) as for an example building envelope works (windows, insulation).

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### 6 Success factors

The ever-increasing energy demand and consumption has resulted in intense changes of the environment. Global warming has gained great attention worldwide. Greenhouse gas (GHG) emissions are from the high consumption of non-renewable fossil energy sources. Countries around the world have attached great importance to energy conservation and energy efficiency. Furthermore, the economic crisis and citizens' disillusionment within the EU are serious challenges to be engaged.

In the conducted survey, Italian respondents mentioned the following two main drivers of the EPC business (see figure below): 'Increasing energy prices' and 'Financial Crisis' – followed by the pressure to reduce costs.

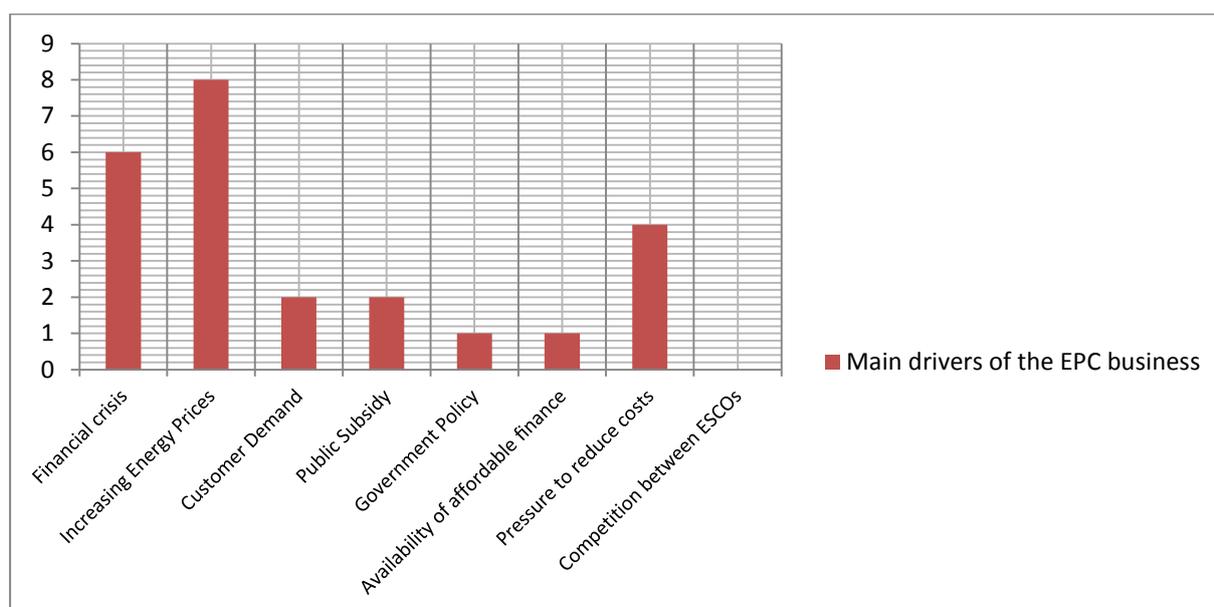


Fig 4. Main drivers of the EPC business Italian respondents (Transparensense survey).

#### 6.1 Successful regulatory models

In 2010, the Status Report<sup>10</sup> (Angelica Marino, Paolo Bertoldi, Silvia Rezessy, and Benigna Boza-Kiss) stated that for Italy “The key existing driving factors at macro level for the growth of the ESCO market in Italy are the commitment to European and national energy CO2 emissions reduction objectives and the high energy prices. In the public sector ESCO projects are necessary due to the need to concentrate resources on core activities and therefore to

<sup>10</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)

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*outsource energy management. Green and white certificates are seen as mechanisms in support of ESCOs in certain areas”.*

The last sentence regarding white certificates is very important, since white certificates has been a success driver for ESCOs and helped them to increase their own market. Additionally, a new Decree (December 28, 2012) sets new national targets for the years 2013-2016 in terms of energy savings for electric and gas distribution’s companies (with more than 50 thousand customers).<sup>11</sup> This Decree could represent a driver to stimulate the market and the ESCO diffusion, as well as a contribution to the achievement of energy efficiency targets for 2020, and it will serve also as a driver for the application of technologies developed by the domestic industries that, in terms of energy efficiency, occupies a leading position on the international scene.

### 6.2 Successful structural models

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.

The level of coordination required by an integrated process between all the actors involved in such projects appears to add up-front costs. However, it has been demonstrated in several projects that coordination between the client, the operation and management personnel, and ESCOs could actually reduce overall costs by streamlining the process.

The experience in such projects in these years has shown that it is important to discuss since the beginning of the operation of both HVAC and other equipment energy efficiency measures and construction energy efficiency measures (high insulated façade, insulation, high efficient glazing, etc. In fact, an integrated combination of these measures can help in increasing energy efficiency for buildings.

### 6.3 Successful financing models

In the context depicted above, one important measure that could really help the development of the energy efficiency, is the TPF, Third Party Financing (Finanziamento Tramite Terzi) already considered in Directive 93/76/EC , in Directive 2006/32/EC and by the

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<sup>11</sup><http://www.gse.it/en/White%20Certificates/Decree%20of%2028%20December%202012/Pages/default.aspx>

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Action Plan for Energy Efficiency, as well as predicted by several Italian countries energy plans.

An ESCO may finance itself the energy investment or an ESCO may secure Third Party Financing (TPF), ensuring the energy (and therefore the economic) performance of such an investment. TPF represents an effective market mechanism, which is selected at an increased rate internationally, for implementing energy-saving investments. Third Party Financing (TPF) can be defined as a “contractual arrangement involving a third party — in addition to the energy supplier and the beneficiary of the energy efficiency improvement measure — that provides the capital for that measure and charges the beneficiary a fee equivalent to a part of the energy savings achieved as a result of the energy efficiency improvement measure. That third party may or may not be an ESCO.”



**Fig 5.** Slide from “L'EPC per la riqualificazione energetica degli edifici: esperienze a confronto”, Raimonda Marzani, Rebuild 2012

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### 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</b>	means a natural or legal person who delivers energy services or other energy efficiency improvement measures in a final

## Report on identified barriers and success factors for EPC implementation in Italy



**company (ESCO)**

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)