



# COUNTRY REPORT ON THE ENERGY EFFICIENCY SERVICES MARKET AND QUALITY

Italy



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## QualitEE Project

This document has been developed as part of the "QualitEE – Quality Certification Frameworks for Energy Efficiency Services" project supported by the EU's Horizon 2020 programme.

The QualitEE consortium comprises 12 partner organisations covering 18 European countries, an expert advisory board, including the European standards body CEN/CENELEC, and 59 supporters from major financial institutions, government bodies, trade associations and certification bodies.

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## Disclaimer

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## Definitions and glossary

Term	Definition
<b>Client</b>	means any natural or legal person to whom an energy service provider delivers energy service
<b>Energy Efficiency Directive (EED)</b>	means Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency
<b>energy efficiency improvement*</b>	means increase in energy efficiency as a result of technological, behavioural and/or economic changes
<b>energy efficiency*</b>	means the ratio of output of performance, service, goods or energy, to input of energy
<b>energy efficiency service (EES)**</b>	means an agreed task or tasks designed to lead to an energy efficiency improvement and other agreed performance criteria
<b>energy efficiency improvement*</b>	means an increase in energy efficiency as a result of technological, behavioural and/or economic changes
<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
<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
<b>energy supply contracting*** (ESC)</b>	means a contractual arrangement for the efficient supply of energy. ESC is contracted and measured in Megawatt hours (MWh) delivered
<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
<b>energy service*</b>	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
<b>energy service provider*</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
<b>energy*</b>	means all forms of energy products, combustible fuels, heat, renewable energy, electricity, or any other form of energy, as defined in Article 2(d) of Regulation (EC) No 1099/2008 of the European Parliament and of the Council of 22 October 2008 on energy statistics
<b>EPC provider</b>	means an energy service provider who delivers energy services in the form of Energy Performance Contracting
<b>ESC provider</b>	means an energy service provider who delivers energy services in the form of Energy Supply Contracting

<b>energy service project facilitator (facilitator)</b>	means an advisory company working on behalf of the client to procure and/or implement an energy service project
<b>Integrated Energy-Contracting (IEC)</b>	means a combination of energy efficiency measures with energy supply contracting typically with short term 'operational verification' rather than ongoing Measurement & Verification
<b>Savings</b>	means energy savings and/or related financial savings; the financial savings include the costs of energy provision and can also include other operational costs, such as the costs of maintenance and workforce
<b>The International Performance Measurement and Verification Protocol (IPMVP)</b>	is the widely referenced framework for "measuring" energy or water savings, which is available at <a href="http://www.evo-world.org">www.evo-world.org</a>

## Notes:

\*Definitions according to the Energy Efficiency Directive

\*\*Definition according the European standard EN 15900:2010

\*\*\*Definition is a simplified version of IEA DSM Task Force 16 definition

# 1 EXECUTIVE SUMMARY

The objective of this report is to compile evidence to inform of the development of European & national quality criteria and the implementation of quality assurance schemes for energy efficiency services (EES). This report has been developed as part of the "QualitEE – Quality Certification Frameworks for Energy Efficiency Services" project supported by the EU's Horizon 2020 programme. The QualitEE project aims to increase investment in EES and improve trust in service providers.

Information has been collected through a market survey as well as literature review. An analysis has been conducted and conclusions formed to be presented in this report as well as in the online database on the QualitEE project website.

This report aims to improve the market knowledge of stakeholders so that they can make better informed decisions based on evidence regarding EES. The barriers and success factors for energy efficiency services, their quality determinants as well as the related legal, political and institutional framework have been mapped. Lessons learned from existing certification frameworks will serve to establish strategies for the implementation of national quality assurance schemes.

The present report analyses the energy efficiency service market in Italy with a focus on Energy Performance Contracting and Energy Supply Contracting, the most extended methods in the country.

Taking the two methods as the base for the report, the aim is to obtain a clear understanding of the state of their implementation in the Italian market, as well as to explain the concepts associated to them. This will be done by using the results of the conducted survey as well as national and international sources.

Several Italian institutions have executed different plans and policies to achieve higher rates of energy efficiency in the country. These include the National Energy Efficiency Plan, which establishes the national targets for reducing energy consumption, and the National Energy Strategy which has three main targets: to increase competitiveness of the Italian market, and to achieve sustainable growth and energy security.

In addition, Legislative Decree 102/14 established that a model contract should be drawn up to increase energy efficiency with the aim of promoting contracts between the public administration and private entities.

To promote energy efficiency in Italy, several support schemes have been developed including white certificates, tax deductions for improving energy efficiency in buildings and a thermal energy account, among others.

The Italian ESCO market is among the biggest and most developed in Europe. Nonetheless, a certain level of confusion exists in the market regarding EPCs since the energy efficiency market is traditionally limited to the formula “payment for work”, which does not meet the necessary requirements to be considered as EPCs. Furthermore, there are around 1,500

companies registered as Energy Service Enterprises but not all of them can be classified as ESCOs under the standard UNI CEI 11352, which demands to have carried out at least one EPC project.

Although uneven, there has been a general increase in certified ESCOs in Italy, which may have been motivated by the modification of the legal framework and the implementation of several support schemes. Also, it must be noted that only a limited number of ESCOs have the technical and financial resources needed to perform long-term EPC contracts in the country.

Fifty percent of respondents stated that their EPC orders had experienced major to slight growth over the last year. The private sector has experienced major growth in EPCs in recent years, with the industrial segment being the most prominent one. Regarding the public sector, municipalities present themselves as the most relevant clients.

The most important barriers in the EPC market are lack of trust in the ESCO industry and complexity of the concept and lack of information and the main drivers are limited budgets in the public sector and energy savings guarantee.

EPC financing in Italy is generally done through project financing or service provider funds. A less occurring but still significant option is financing through debt borrowed by the service provider.

In the case of the ESC market, the growth experienced has been slower than the one in the EPC market. According to the data obtained by the survey, 55% of respondents experienced little to a slight decline in their number of orders and the remaining 45% saw major to slight growth.

The most relevant barriers for ESCs are pressure to reduce costs and lack of trust in the ESCO industry and the main drivers are limited budgets in the public sector and energy savings guarantee.

The last part of the report focuses on the certification of energy services. Despite being one of the largest energy efficiency markets in Europe, no energy efficiency services certification has been identified in the Italian market.

Lastly, through the survey it was identified that a quality assurance scheme would generally increase client trust in EPC/ESC services and providers which would act as an incentive for the development of the mark, scaling up investments and client trust.

## 2 INTRODUCTION

### 2.1 Objective of the report

The objective of this report is to compile evidence to inform of the development of European and national quality criteria and the implementation of quality assurance schemes for Energy Efficiency Services (EES). The report has been developed as part of the "QualitEE – Quality Certification Frameworks for Energy Efficiency Services" project supported by the EU's Horizon 2020 programme. The QualitEE project aims to increase investment in EES and improve trust in service providers.

Information has been collected through a market survey in the form of an online questionnaire and personal interviews. In addition, literature review has been conducted in existing local and national publications and documents. An analysis has been conducted and conclusions formed to be presented in this report as well as in the online database on the QualitEE project website.

This report aims to improve the market knowledge of stakeholders so that they can make better informed decisions based on evidence regarding EES. The barriers and success factors for energy efficiency services, their quality determinants as well as the related legal, political and institutional framework have been mapped. Lessons learned from existing certification frameworks will serve to establish strategies for the implementation of national quality assurance schemes.

### 2.2 Scope of the report and definitions

#### 2.2.1 Energy Efficiency Services (EES)

The European standard EN 15900:2010 defines EES as an agreed task or tasks designed to lead to an energy efficiency improvement<sup>1</sup> and other agreed performance criteria. EES shall include an energy audit (identification and selection of actions, e.g. according to EN 16247) as well as the implementation of actions and the measurement and verification (M&V, e.g. according to IPMVP) of energy savings. A documented description of the proposed or agreed framework for the actions and the follow-up procedure shall also be provided – often referred to as an Investment Grade Proposal. The improvement of energy efficiency shall be measured and verified over a contractually defined period through contractually agreed methods (Amann S., Leutgöb K. et al. 2015).

This report focuses on the following key types of energy efficiency services:

-  Energy Performance Contracting (EPC)

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<sup>1</sup> According to the EED "energy efficiency improvement" means "an increase in energy efficiency as a result of technological, behavioural and/or economic changes".

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## Energy Supply Contracting (ESC)

### 2.2.2 Energy Performance Contracting (EPC)

According to the Energy Efficiency Directive, "an EPC is a contractual arrangement between the beneficiary and the provider of an energy efficiency improvement measure, verified and monitored throughout 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 criteria, such as financial savings."

The energy efficiency measures, like the ones listed above, may also be based on low or no up-front investment. EPC may also include additional services related to efficient energy supply.

Within the report, the focus will be on EPC projects where the above mentioned "contractually agreed level of energy efficiency improvement" is **guaranteed** by the EPC provider. The **guarantee of energy efficiency improvement** is the commitment of the service provider to achieve a quantified energy efficiency improvement (EN 15900:2010).

This is in line with the EED, Annex XIII which lists guaranteed savings among the minimum items to be included in energy performance contracts with the public sector or in the associated tender specifications. Moreover, in Article 18 of the EED, Member States are required to promote the energy services market and access for SMEs to this market by, among other things, disseminating clear and easily accessible information on available energy service contracts and clauses that should be included in such contracts to **guarantee energy savings** as well as final customers' rights.

The European Code of Conduct for EPC (2014) defines that the EPC provider assumes the **contractually agreed performance risks of the project** throughout the duration of the EPC contract. These include the risks of not achieving contractually agreed savings as well as design risks, implementation risks and risks related to the operation of installed measures. If an EPC project fails to achieve the performance specified in the contract, the EPC provider is contractually obligated to compensate savings shortfalls that occurred over the life of the contract. The excess savings should be shared in a fair manner according to the methodology defined in the contract.

### 2.2.3 Energy Supply Contracting (ESC)

"An ESC is a contractual arrangement for the efficient supply of energy. ESC is contracted and measured in Megawatt hours (MWh) delivered". This definition is a simplified version of the IEA DSM Task Force 16 definition.

### 2.2.4 Other types of energy efficiency services

Even though other types of energy efficiency services exist in Italy, their presence in the market is very limited, and for that reason this report will focus on EPCs and ESCs.

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### 2.2.5 Market actors

The main actors operating on the EES markets are the EES providers, clients and project facilitators.

Within the QualitEE project, the EED's definition of energy service provider is used:

- ✔ "An '**energy service provider**' is a natural or legal person who delivers energy services<sup>2</sup> or other energy efficiency improvement measures in a final customer's facility or premises."

The term "ESCO" is used as an equivalent of energy service provider. The above-listed definitions are also used to define the following terms:

- ✔ "An '**EPC provider**' is an energy service provider who delivers energy services in the form of EPC."
- ✔ "An '**ESC provider**' is an energy service provider who delivers energy services in the form of ESC."
- ✔ "A '**Client**' is any natural or legal person to whom an energy service provider delivers an energy service."
- ✔ "An energy service project '**Facilitator**' is an advisory company working on behalf of the client to procure and/or implement an energy service." In the QualitEE project we use the shorter term "facilitator" to denote an energy service project facilitator.

## 2.3 Sources of data and methodology

### 2.3.1 Sources of data

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

- ✔ the results of a nationwide EES survey of the country's main actors within the EES market; and
- ✔ a literature review (publications and studies, legislative documents, official statistics and databases) and the knowledge of Creara's team based on 15 years of experience.

### 2.3.2 Survey and interviews

To collect the data used in this document, the market actors have been approached in the following manner:

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<sup>2</sup> According to the EED: "An 'energy service' means 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."

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- ✔ an online questionnaire was distributed to the country's most relevant EES providers and facilitators;
- ✔ personal semi-structured interviews have been conducted with financial institutions and client organisations implementing EES projects.

The market and quality survey focused on energy efficiency services and gave stakeholders an opportunity to provide their input and steer the development of quality assurance. The surveys and interviews contained questions about the EES market, barriers and success factors, EES quality determinants, minimum financial information requirements for financial institutions and certification frameworks, as well as EES-related legal, political and institutional frameworks. The answers were then analysed and the results are presented in this report in an aggregated manner.

There were 9 respondents to the online survey in Italy:

- ✔ 6 representatives of ESCOs, where all of them operate on both the EPC and ESC markets;
- ✔ 3 representatives of EES facilitators, two of them operating on both the EPC and ESC markets and one of them operating the EPC market only.

In addition, there are 6 respondents to the personal interviews:

- ✔ 3 representatives of finance houses, which are the main sources of bank credits for the EPC projects in Italy;
- ✔ 3 EES clients.

### 2.3.3 Literature and other sources of data

Other than the surveys, the report is built on research from local and national literature (legislative documents, publications and studies, official statistics and databases) and the knowledge of Creara's team based on 15 years of experience.

The key sources of information were up-to-date national sources, such as:

- ✔ Data and studies by national Associations such as FIRE, FederEsco or AssoEsco.
- ✔ Publications by the Ministry of Economic Development and the Ministry for the Environment, Land and Sea, and other national public bodies.
- ✔ Publications by different organs of the EU

The report also builds on the data and information gathered primarily by the Transparenze project and projects run in parallel (EPC+, Guarantee, Trust EPC South, Investor Confidence Project). In addition, it used data from the Status Report on Energy Service Companies Market in Europe by JRC and from the Status Report on Energy Policies of IEA Countries by IEA.

## 3 LEGAL AND REGULATORY FRAMEWORKS

### 3.1 Key governmental institutions

A dual system exists in Italy in which the Ministry of Economic Development is in charge of energy policy and the Ministry for the Environment, Land and Sea is responsible for climate policy. Both Ministries together co-sign policies related with renewable energy and/or energy efficiency.

The Italian Regulatory Authority for Electricity Gas and Water (AEEGSI), named as *Autorità di Regolazione per Energia Reti e Ambiente* at the beginning of 2018, is the independent regulatory body of the energy markets and integrated water services. It was established by law in 1995 and it is the body in charge of setting tariffs, defining quality standards or monitoring services, among other functions. The AEEGSI also holds the registry for Energy Services Enterprises.

ENEA is the Italian National Agency for New Technologies, Energy and Sustainable Economic Development, a public body aimed at research, technological innovation and the provision of advanced services to enterprises, public administration and citizens in the sectors of energy, the environment and sustainable economic development. ENEA is also the coordinator of the energy efficiency (with the National Agency for Energy Efficiency).

With the National Agency for Energy Efficiency, ENEA also coordinates energy efficiency policies. This Agency offers technical and scientific support to private companies, and collaborates with public bodies in the preparation, implementation and control of national energy policies.

FIRE (Federazione Italiana per l'uso Razionale dell'Energia) is an independent non-profit organization, whose purpose is to promote sustainability and the efficient use of energy. FIRE was founded in 1987 by ENEA and two energy management associations. FIRE has around 450 members, which cover the entirety of the energy sector.

### 3.2 Implementation of the EU Energy Efficiency Directive

Directive 2012/27/EU on energy efficiency (EED) establishes a common framework of measures for the promotion of energy efficiency within the EU to ensure the achievement of its 2020 20% headline target on energy efficiency.

Article 18 of the EED also imposes obligations on Member States to support the energy services market. In Italy, the following obligations have been transposed so far:

-  Legislative Decree 102/14 transposes the EU Energy Efficiency Directive. Concretely, it transposes the energy audit obligation for large enterprises, the role of ESCOs and the use of EPCs. Besides, it highlights the role of white certificates.

- ✔ The energy service contract was introduced for the first time in 1993. The Legislative Decree 115/2008 defines the requirements that an energy service contract must meet.
- ✔ The technical standard UNI CEI 11352 was introduced in 2010. To be certified as an ESCO, any company must perform or have performed at least one EPC.

### 3.3 National strategy documents

#### 3.3.1 National Energy Efficiency Action Plan

The new National Energy Efficiency Action Plan was passed in June 2017 and it illustrates the results achieved up to 2016 and shows the main measures implemented to achieve the energy efficiency targets for 2020.

In its second chapter, the National Plan analyses the national targets for reducing primary and final energy consumption, specifying the savings in final energy use for each economic sector and for the main instrument for promoting energy efficiency. So far, the results are in line with the trend of savings expected to achieve the goal in 2020.

Within chapter three, many measures are presented. This chapter is subdivided in different sections, depending on the type of measures. Hence, the first subchapter is dedicated to describing transversal measures such as the mandatory energy efficiency scheme for white certificates, tax deductions for improving energy efficiency in buildings and the thermal feed-in.

In the following lines, different measures are presented according to the ambit they are applied to. For example, energy efficiency measures to be applied on buildings, public sector, industrial sector or transportation are introduced and analysed.

The National Energy Efficiency Action Plan is available in Italian in the following link:

<https://ec.europa.eu/energy/en/topics/energy-efficiency/energy-efficiency-directive/national-energy-efficiency-action-plans>

#### 3.3.2 National Energy Strategy

In addition to the National Energy Efficiency Action Plan, Italy's National Energy Strategy 2017 lays down the actions to be achieved by 2030, in accordance with the long-term scenario drawn up in the EU Energy Roadmap 2050.

The National Energy Strategy, elaborated by the Ministry of Economic Development together with the Ministry for the Environment, Land and Sea, focuses on three different main targets: competitiveness of the Italian market, sustainable growth and energy security.

To achieve the goals established, some priority areas have been identified in the proposal of concrete actions:

-  Renewable Energies
-  Energy efficiency
-  Decarbonization
-  Energy security
-  Energy markets
-  Research and Innovation: governance and regulation

### 3.4 Standardisation for energy efficiency services

Legislative Decree 102/14 established that ENEA should draw up a model contract for the improvement of Energy Performance. In September 2014, ENEA published the “*Linee guida Contratti di Prestazione Energetica (EPC)*”.

This report is concerned with the development of an application model contract for public administrations that involve private operators, and hence encourage aggregate demand and generate economies of scale.

The EPC contract model is available in the next link:

[http://www.enea.it/it/Ricerca\\_sviluppo/documenti/ricerca-di-sistema-elettrico/edifici-pa/2013/rds-par2013-127.pdf](http://www.enea.it/it/Ricerca_sviluppo/documenti/ricerca-di-sistema-elettrico/edifici-pa/2013/rds-par2013-127.pdf)

### 3.5 European Code of Conduct for EPC

The European Code of Conduct for EPC defines the basic values and principles that are considered fundamental for the successful preparation and implementation of EPC projects. The Code of Conduct has been developed within the Intelligent Energy Europe project Transparence in cooperation with EPC providers, clients and European ESCO associations, among others. The two organisations representing ESCOs at European level – the European Association of Energy Service Companies (eu.esco) and the European Federation of Intelligent Energy Efficiency Services (EFIEES) – endorse the European Code of Conduct for EPC and support its use when implementing EPC projects and continue in administering and maintaining the Code of Conduct.

By the end of October 2017, the Code of Conduct had 234 signatories across Europe. This includes 148 EPC providers, 13 national associations (with 160 members in total), two European associations of ESCOs and 70 facilitators and other signatories. The European administrators organise regular conference calls with national administrators to exchange information about regulatory developments and new projects.

It is expected that the European Code of Conduct for EPC will serve as a harmonised European quality standard of EPC projects, raise potential clients' confidence in the business model and thus lead to higher demand for EPC projects.

The list of the Code signatories is available online and promoted within eu.esco and EFIEES activities (press releases, articles, national and international events). EPC providers who become signatories of the EPC Code compromise to conduct EPC projects in compliance with the EPC Code of Conduct. It is a voluntary commitment conducted by EPC providers and it is not legally binding.

The Code has vast potential to support EPC market development, which can be exploited. For example, it has been used as a discussion guideline between client and EPC provider, guidance for the preparation of tender dossiers and contracts, and as a marketing tool. Within the QualitEE project, it is being used as a starting point for developing an energy service quality assurance scheme.

In Italy, the role of National Code Administrator is held by FEDERESCO, the National Federation of Italian ESCOs. According to the official website of Transparenze, four different organisations have signed the Code of Conduct so far.

### 3.6 Support schemes

Different support schemes have been developed in Italy in recent years with the aim of promoting energy efficiency. The main systems are:

 **White certificates.** It is considered the main support scheme as well as the principal driver for the implementation of energy efficiency measures in Italy. Legislative Decree 102/14 established that ESCOs and/or final users will be able to obtain white certificates depending on the level of energy efficiency achieved. Each white certificate implies an achieved saving approximately equivalent to 0.3 - 0.4 tons of oil.

Final users can sell -through ESCOs- these certificates to big natural gas and electricity distributors, which are required by law to carry out energy-efficiency improvements or to buy white certificates on the market. The average price for a white certificate in the market was EUR 385 in January 2018. The volume of primary energy savings certified in 2016 for new energy efficiency projects came to a total of around 0.27 Mtoe.

Most Energy Efficiency Certificates obtained in 2016 were by means of projects carried out in the industrial sector (56% of the total). The residential sector represents some 40% of Energy Efficiency Certificates recognised in 2016.

Since approximately last year, the number of white certificates on the market has abruptly decreased, because the Gestore Mercati Energetici (GME, Energy Market Operator) has stopped the verification of an important number of projects. The verification process is very slow and often leads to an enormous reduction of emitted white certificates.

 **The tax deductions for energy efficiency<sup>3</sup>** improvement actions are granted to the civil sector, including housing and services/commercial. The tax deductions consist of reductions of IRPEF (personal income tax) and IRES (corporate income tax) granted for

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<sup>3</sup> ENEA (11/2015), Energy Efficiency trends and policies in ITALY, at <http://www.odyssee-mure.eu/publications/national-reports/energy-efficiency-italy.pdf>

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actions improving the energy efficiency of existing buildings, in particular for expenses incurred to:

- reduce heating demand by means of overall upgrading of the building's energy performance;
- improve the building's thermal insulation (replacement of windows, including blinds or shutters, and insulation of roofs, walls and floors);
- replace heating systems with condensing boilers or heat pumps;
- replace electrical water heaters with heat pump water heaters.

 **“Conto Termico” (Thermal Energy Account).** In February 2016, the legislation was revised with the aim of promoting greater access to resources for businesses, households and public administration. The Decree concerned has strengthened the instrument: in particular, new measures which may be the subject of incentives have been included. These measures are: opaque building envelope, transparent closures, condensation generators, shading, NZEB buildings, lighting systems and building automation. During 2016, around 950 applications were received with over EUR 32 million of incentives requested.

Apart from these three systems, other measures and tools have been passed, such as:

-  Reduction of construction costs at regional and national level for NZEB buildings
-  Programme for upgrading the energy efficiency of central government buildings (PREPAC)
-  Co-financing of energy audits in SMEs
-  Structural funds
-  National Energy Efficiency Fund
-  Kyoto Fund for the energy efficiency of educational buildings
-  Fund for the purchase and/or restructuring of buildings (Plafond casa)
-  Green Public Procurement
-  Legislative trends in energy efficiency for the transport sector: transposition of Directive 2014/94/EU

## 4 ENERGY PERFORMANCE CONTRACTING MARKET

### 4.1 EPC market actors

There are several important actors in the EPC market in Italy. They can be grouped in four main groups: EPC providers and facilitators, clients, financial institutions and decision makers.

#### 4.1.1 EPC providers and facilitators

This group includes any agent working on the energy efficiency field.

- ✔ **EPC providers:** they are energy service providers who deliver energy services in the form of EPC. The EPC provider bears commercial, technical implementation and operational risks and guarantees the outcome and all-inclusive cost of services for the duration of the contract. It is important to create a long-term partnership between the provider and the customer based on their common goals. Providers should also offer a training on the new measures implemented for the customer's operational staff.
- ✔ **EPC facilitators:** they are usually consulting companies that assist the client on the preparation of the project. Traditionally organisations start by engaging an energy consultant to identify opportunities for energy savings, ranging from operating practices, to maintenance, controls and equipment investments.
- ✔ **National Associations:** EPC providers and/or facilitators usually create these associations, with the aim of establishing lobbies and being updated with all the news of the sector. The most important national associations in Italy are FederEsco and AssoEsco.

#### 4.1.2 Clients

Those who are interested in developing EE measures, usually owners or tenants of facilities/premises. Within the QualitEE project, six different segments where clients usually come from have been considered and they are grouped in public and private sectors.

- ✔ **Private sector – Offices:** only includes private offices.
- ✔ **Private sector – Retail / leisure:** includes every establishment related to perishable (such as supermarkets) and non-perishable foods (clothes, home, appliances, shopping centres and other). It also includes establishments such as libraries, theatres or sport centres.
- ✔ **Private sector – Industrial:** includes any type of factory where manufacturing processes are carried out.
- ✔ **Public sector – Municipalities:** includes public projects on a local scope, such as public lighting street or district heating.

- ✔ **Public sector – Health sector:** includes hospitals, primary health centres and others.
- ✔ **Public sector – Education:** includes schools, universities and others.
- ✔ **Other:** includes those projects not covered by the rest of categories.

#### 4.1.3 Financial institutions

A third party that finances the EPC provider, the customer, or a combination of both.

#### 4.1.4 Decision makers

In this group, all the public bodies who make decisions and contribute to the adoption of laws and politics related to the energy efficiency field are included. Some of these public bodies are the Government, AEEGSI or ENEA, among others.

## 4.2 EPC market developments

The ESCO market in Italy is among the biggest and most developed ones in Europe. However, it should be noted that there is some degree of confusion within this market.

Despite being developed, the ESCO market in Italy is growing in an irregular and inconsistent pattern. In addition, the Energy Efficiency market may be distorted by the White Certificates and other incentives: if these incentives did not exist, most of the ESCOs which are SMEs would not have the capability to operate EPC projects. Still, there are a few large companies that can implement this type of projects.

SMEs do not have the capability to implement EPC both from the demand and the supply sides in terms of resources. The need for tools (standards, technical documents, and financial, insurance and contractual instruments) to support EPC energy efficiency measures in a harmonized and integrative way is confirmed as well by the European EPC+ project<sup>4</sup>.

Moreover, the energy efficiency market is traditionally limited to the formula "payment for work" instead of "payment for energy savings". Thus, many projects presented as Energy Performance Contracts do not provide energy saving guarantees and therefore do not meet the necessary criteria to be considered actual EPCs as described and defined both in the glossary and throughout this report.

There are around 1,500 companies registered as Energy Services Enterprises that participate currently in the white certificates market<sup>5</sup>. However, not all of these can be considered "energy service companies" under the standard UNI CEI 11352, which requires for companies to have carried out at least one EPC project. According to this standard, there are about 1,000 ESCOs in Italy<sup>6</sup>. This number has been steadily growing in recent years.

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<sup>4</sup> EPC+: <http://epcplus.org/>

<sup>5</sup> Gestori Mercati Energetici: <http://www.mercatoelettrico.org>

<sup>6</sup> Accredia: [https://www.accredia.it/app/uploads/2018/11/DatiESCO\\_15-11-2018.pdf](https://www.accredia.it/app/uploads/2018/11/DatiESCO_15-11-2018.pdf)

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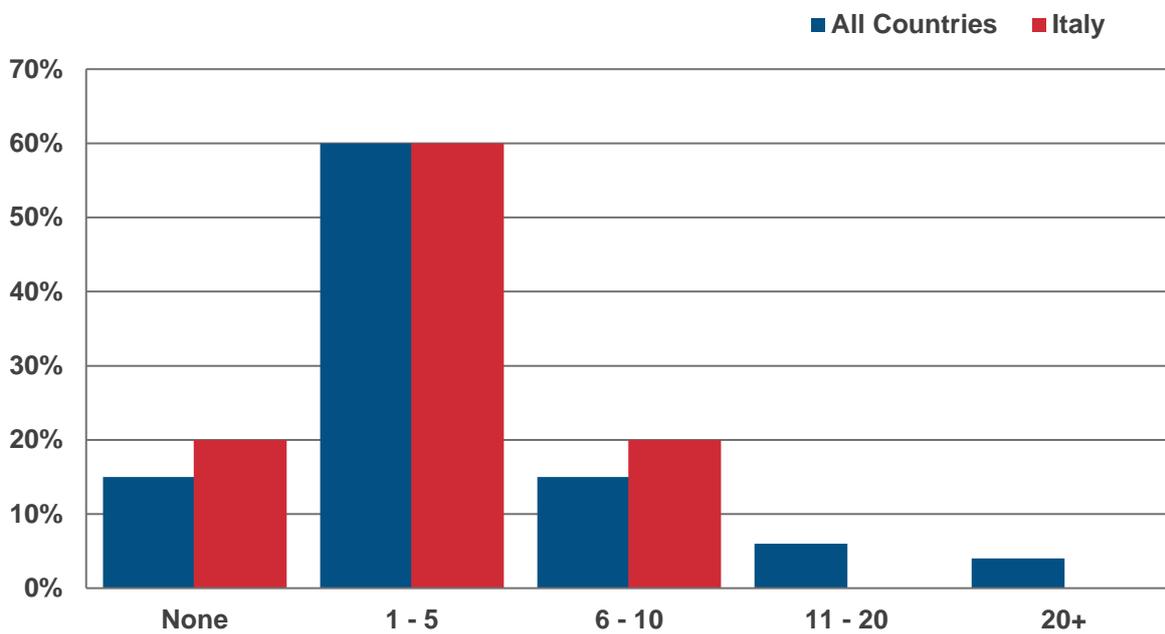
One possible explanation for this rise in the number of ESCOs could be the modification of the legal framework attached to the approval of different support schemes. Whatever the reason, the Italian market has become more competitive in recent years and, furthermore, the growth is expected to continue as the market is considered to stand behind expectations.

Despite the increment of certified ESCOs, it is estimated that only a limited number of them have the technical and financial resources to perform EPC contracts with a duration over the 10 years. However, this number is also expected to increase in the next years continuing the Italian market growth trend.

The text below outlines the state of play in relation to the Italian Energy Performance Contracting market, using a QualitEE survey dataset covering six active service providers currently operating in the Italian market, as well as three key project facilitators. Moreover, three financial institutions and three customers of energy efficiency services were also interviewed in order to have the most comprehensive analysis of the market.

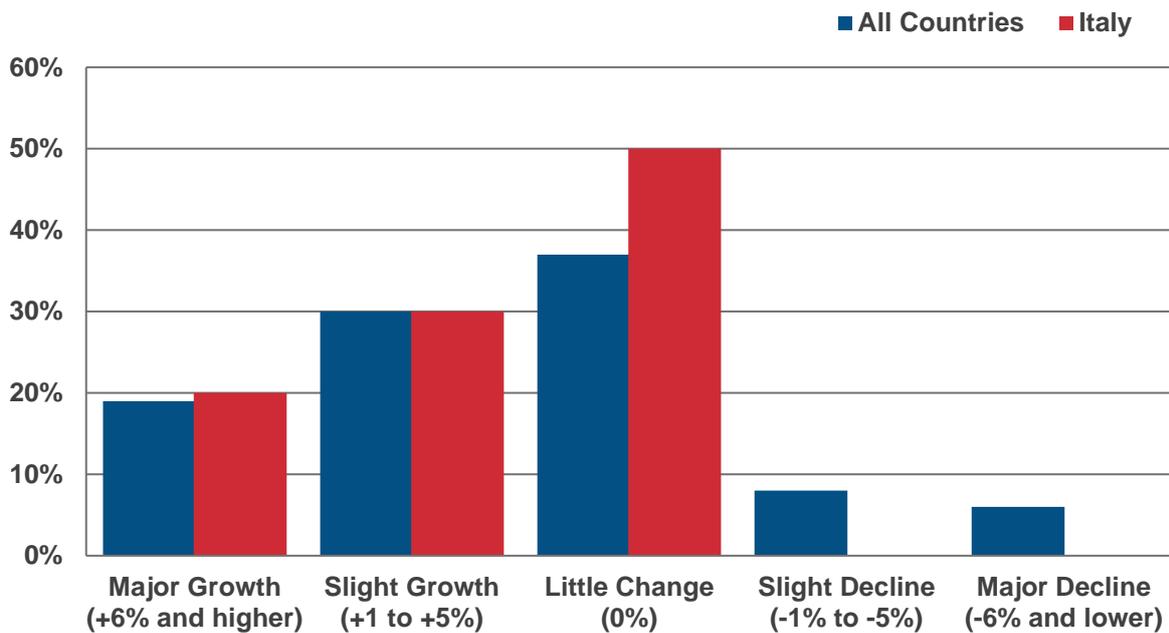
All the Italian respondents - EPC providers and facilitators - were involved in none or up to 10 EPC projects during the last year, which are in line compared to the All Countries dataset. Specifically, the graph shows that 20% of Italian respondents initiated more than six projects, and another 20% did not become involved with any new projects in the last 12 months. The remaining 60% of Italian respondents initiated from one to five EPC projects.

**Figure 1. How many EPC projects (that have reached Contract Signature) has your organization initiated / become involved with in the last 12 months? (Percentage share of responses by providers and facilitators Sept 2017)**



Half of Italian respondents – EPC providers and facilitators – did not experience any significant change in the EPC orders during the last year. The remaining half of respondents witnessed an increase in their orders: 20% stated they experienced major growth, and 30% a slight growth of their orders.

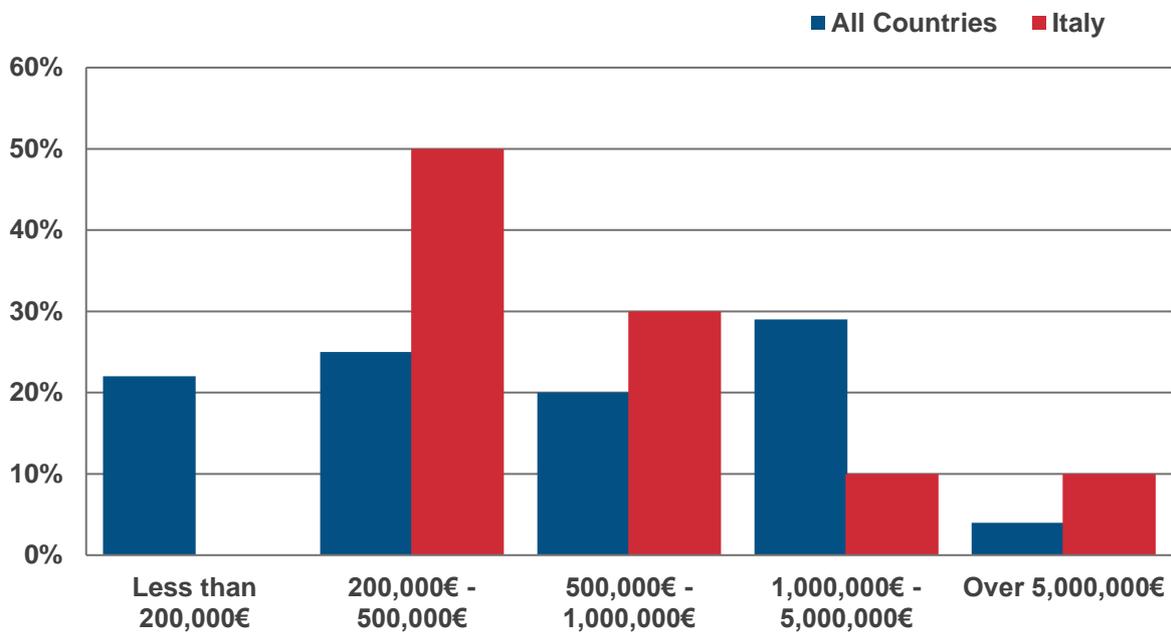
Figure 2. In the last 12 months your EPC orders have seen (Percentage share of responses by providers and facilitators Sept 2017)



In contrast to the picture across All Countries in the survey, no Italian respondent reported becoming involved in a project worth below EUR 200,000. The half of respondents for Italy stated their most common overall value of the EPC projects they are involved in varies between EUR 200,000 and EUR500,000, which doubles the value of All Countries for the same range.

On the other hand, proportion of Italian respondents who were involved in projects with a value between one and five million is almost three times lower than reported across All Countries whilst 10% of Italian respondents performed projects over five million, this is considerably higher than four percent of respondents across All Countries.

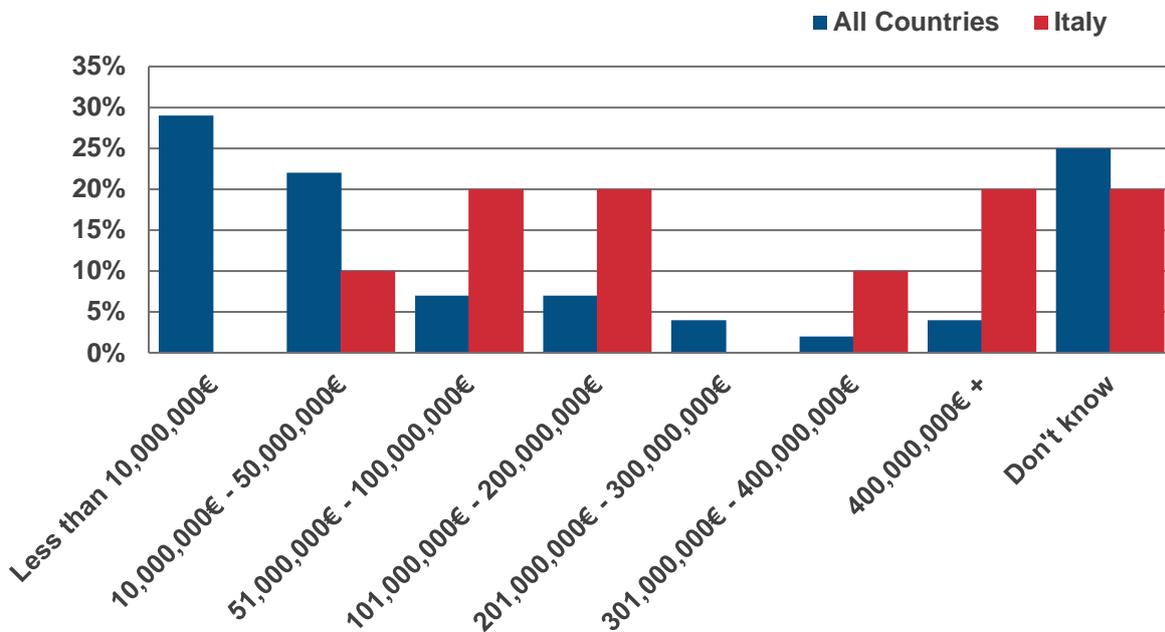
**Figure 3. What is the most common overall value (investment outlay) of the EPC projects you are involved in?**



Although a few reports estimate the Italian market value at EUR 500 million, only 20% of Italian respondents consider that the market size is over EUR 400 million. Still, Figure 4 reflects that the percentage of Italian respondents who estimate said market size is higher than the estimation obtained from the All Countries dataset. This could lead to the conclusion that the Italian market is one of the most mature and biggest among All Countries surveyed, as also stated by the Joint Research Centre (JRC)<sup>7</sup>.

Moreover, not a single Italian respondent thinks the value of the Italian EPC market is lower than EUR 10 million, and estimations from Italian respondents are in general of higher value than estimations of respondents from the rest of the European countries analysed.

**Figure 4. Roughly how much revenue do you think the EPC market in your country generated in 2016?**

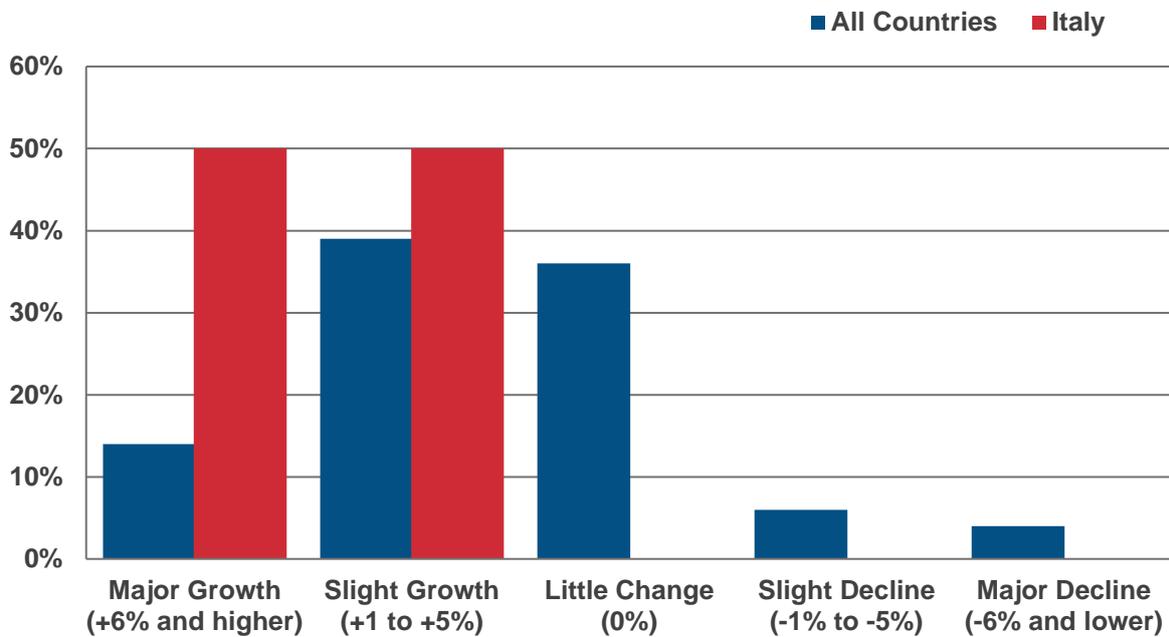


<sup>7</sup> Joint Research Centre (2017), Practices and opportunities for EPC in the public sector in EU Member States, pag. 64. <http://publications.jrc.ec.europa.eu/repository/bitstream/JRC106625/kjna28602enn.pdf>

Regarding the trend of the market, all respondents confirm what has been previously explained and analysed: the volume of EPC projects is growing. Moreover, an increase is still expected to happen as the market is considered to stand behind expectations. Thus, all Italian respondents think the market has grown in the last 12 months. Fifty percent of respondents believe that there has been a slight increase; the other half considers the market has experienced a major growth.

These Italian responses are in contrast with the view across All Countries in the survey. Only 53% of respondents across All Countries agreed on a major or slight increase of their national EPC markets, whilst the 36% considered there has not been significant change and the remaining 10% thought there was a decrease.

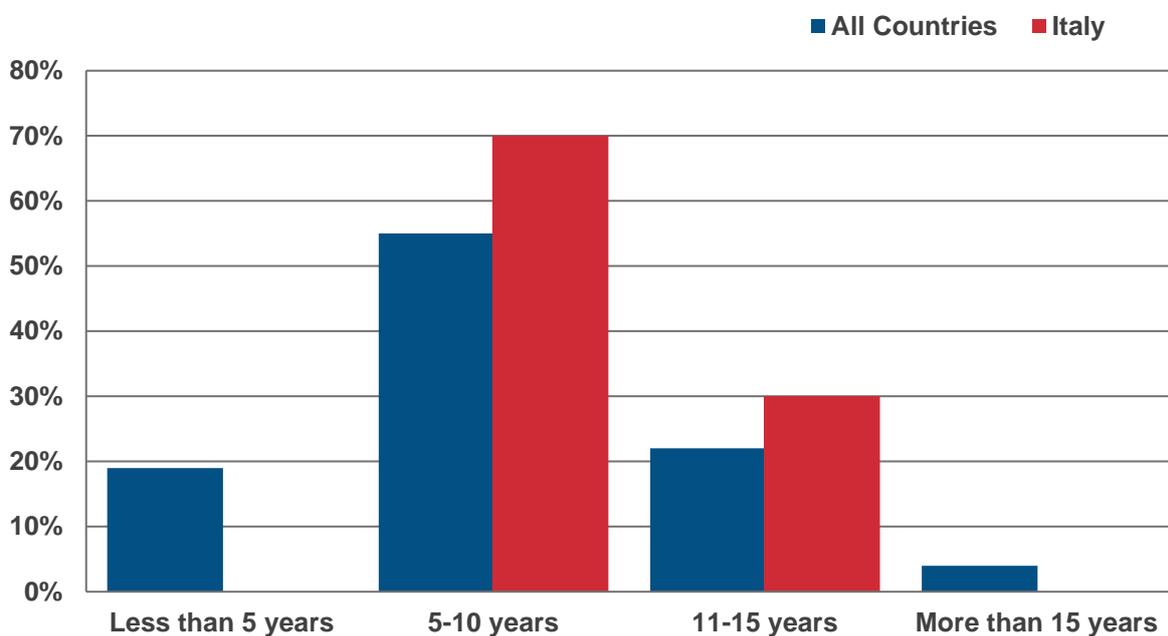
Figure 5. Over the last 12 months, the market for EPC in your country has seen:



### 4.3 EPC business models

In Italy, all the respondents signed their EPC contracts for a duration between five and 15 years. Concretely, 70% of responses assure that EPC projects usually last from five to 10 years, and only 30% of respondents are involved in projects between 11 and 15 years. According to the responses, there is no EPC contract with a duration below five years or over 15 years.

Figure 6. What is the most common duration of the Energy Performance Contracts you are involved in?

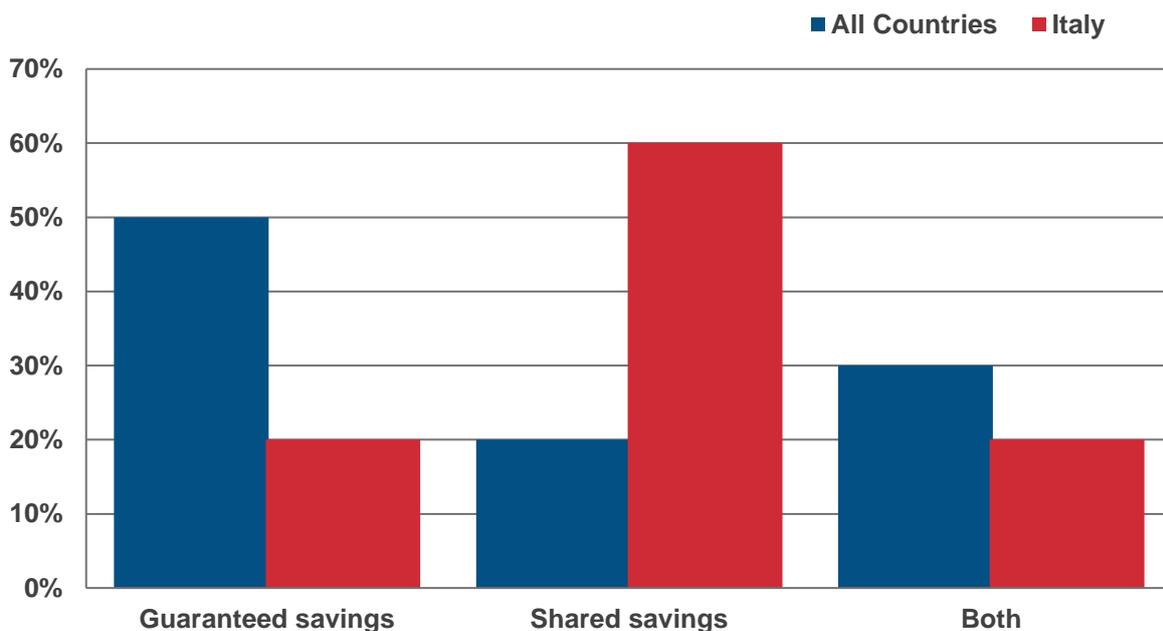


Regarding the different types of EPC models, 60% of respondents only performed a ‘shared savings’ model in their EPC contracts during the last year. The ‘guaranteed savings’ scheme was followed by 20% of respondents. The remaining 20% used both models, as shown in Figure 7.

The shared savings model is a good introductory business model in developing markets, while the guaranteed savings model usually functions properly in countries with a well-established banking structure, high familiarity with project financing and sufficient technical expertise.

Hence, regarding the responses it can be concluded that the Italian EPC market is still in a developing phase for this type of services and is expected to growth, despite being one of the most developed ESCO market in Europe.

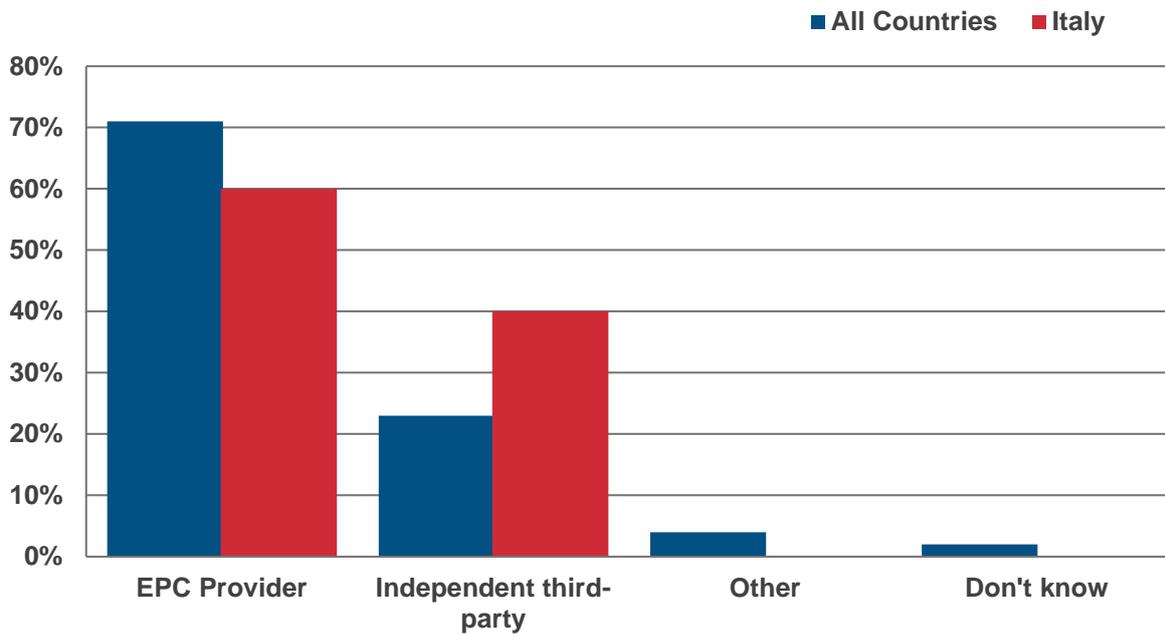
**Figure 7. What type of energy savings model is offered in the EPC projects you are involved in? (in a shared savings model, the client pays the ESCO a pre-determined percentage of its achieved cost savings from the project)**



*Note: in a shared savings model, the client pays the ESCO a pre-determined percentage of its achieved cost savings from the project*

Whilst the majority of Italian respondents highlighted that the EPC provider is typically responsible for energy savings performance analysis (often referred to as measurement & verification or M&V), which is similar to the situation across All Countries, a greater emphasis on performance analysis by independent third parties was reported in Italy than is the norm across All Countries.

**Figure 8. Who typically delivers the energy savings performance analysis in the EPC projects you are involved with?**



## 4.4 EPC market sectors

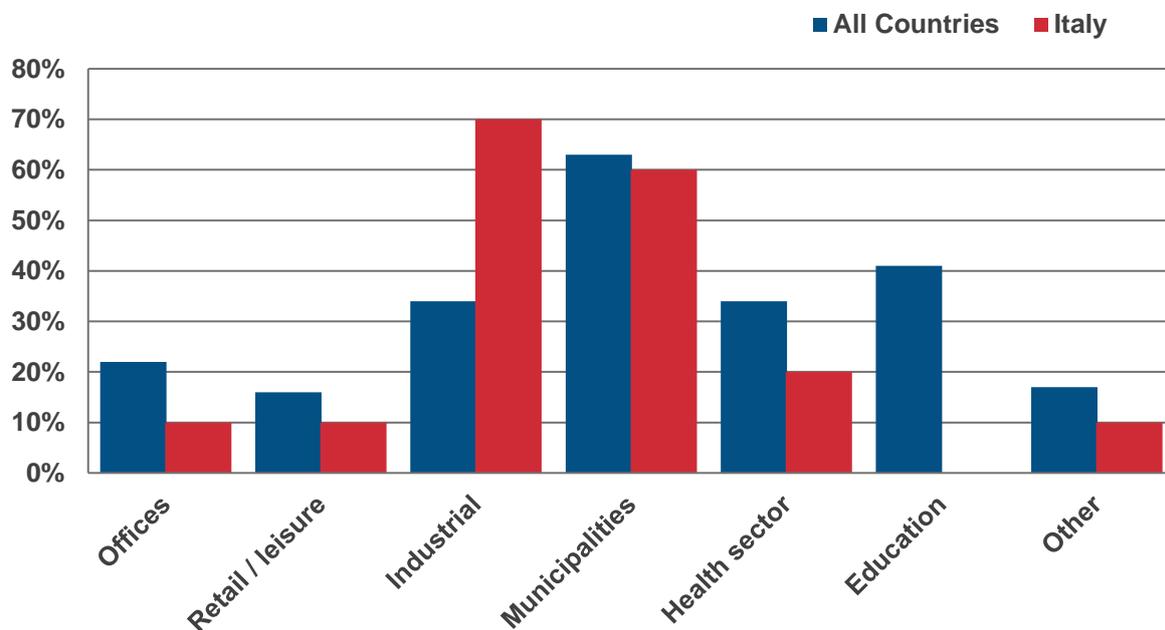
The private sector has registered major growth of EPCs in recent years. Within the private sector, the industrial segment is the more developed one in the implementation of EPC projects.

On the other hand, public sector also has a relevant weight in the client portfolio of the respondents, especially regarding municipalities. Surprisingly, none of the EPC providers surveyed declared to have clients from the education sector. Therefore, schools or universities could be an interesting target for this type of services.

If we compare the Italian results with the view across All Countries in the survey, the most obvious conclusion is the significant weight of the industrial sector in Italy (70%). This is considerably higher than across All Countries in the survey (34%). In general, apart from the industrial sector, results are lower in Italy than across All Countries in the survey.

Education sector is the second most important segment in the portfolio of EPC Providers across All Countries. As already mentioned, there are no projects in the education sector in Italy according to the survey.

Figure 9. Which sectors do your EPC clients generally come from?

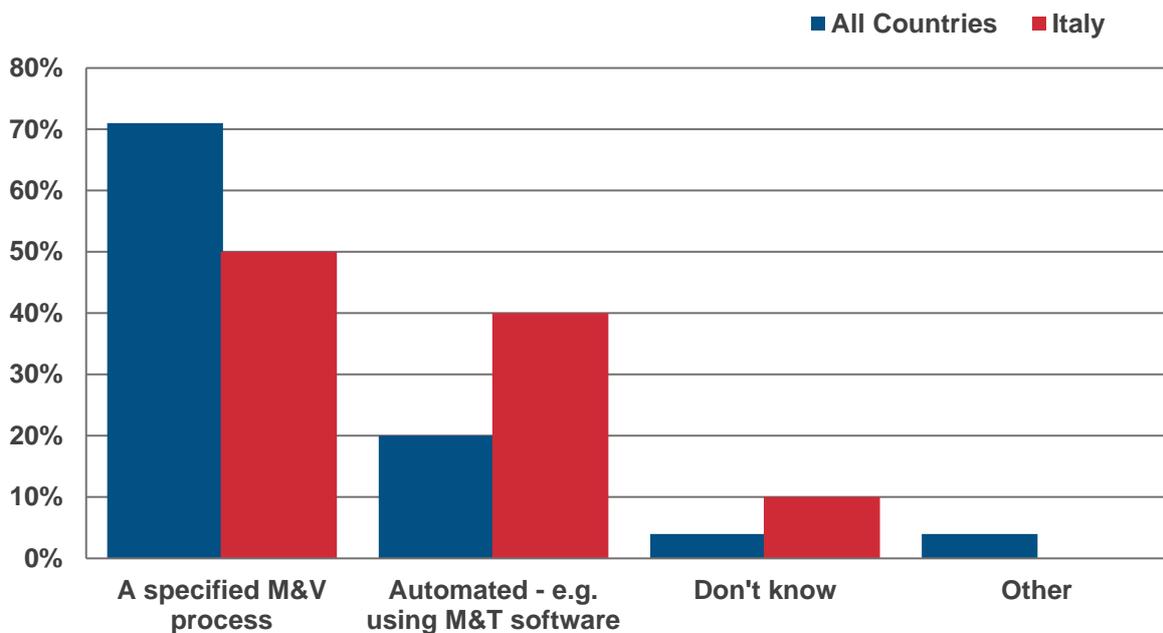


## 4.5 EPC measurement & verification

Half of respondents use a specified M&V process to measure and quantify energy savings. This percentage is lower than compared to the All Countries dataset (71%). An automated system to measure and verify savings is used by 40% of Italian respondents. Surprisingly, the remaining 10% of Italian respondents did not know what system their companies use in the process of measurement and verification.

The International Performance Measurement & Verification Protocol (IPMVP) is the most extended M&V approach in EPC projects within Italy. Currently, there are 140 CMVPs -Certified M&V Professionals- in Italy<sup>8</sup>.

**Figure 10. How is the energy saving performance of the EPC projects you are involved with typically measured and quantified?**



<sup>8</sup>Association of Energy Engineers (AEE) (30/04/2018), [http://portal.aeecenter.org/custom/cpdirectory/search\\_results.cfm](http://portal.aeecenter.org/custom/cpdirectory/search_results.cfm)

## 4.6 EPC market barriers

Market barriers identified by QualitEE in the market research are presented below in Figure 11. Italian EPC providers and facilitators selected 'Lack of trust in the ESCO industry' and 'Complexity of the concept / Lack of information' as the top two barriers to EPC business in Italy, matching their European counterparts across All Countries. Concretely, 70% of Italian respondents think these two barriers are the main ones in the EPC market development.

Whilst 'Low energy prices' and 'Administrative barriers in public sector' were both in the third position of the ranking of main barriers selected across All Countries in the survey, 50% of Italian respondents positioned the 'Administrative barriers in public sector' and also 'Uncertain policy/subsidies' in this third position. According to JRC<sup>9</sup>, the public sector's demand is limited, because public bodies barely know about the possibility of an ECP and therefore no tenders are announced. Moreover, there is a significant risk of non-payment by the public clients.

The biggest difference between data from Italy and the All Countries dataset is that while 'low energy prices' are not considered as a relevant barrier in Italy, almost half of the respondents across All countries recognized it as one of the main barriers. Notably, none of the Italian respondents considered raising affordable finance or staff costs to be barriers.

### 4.6.1 Regulatory and administrative barriers

Administrative barriers in the public sector are crucial for the development of the market. Although several support schemes have been approved, there is still a large margin of improvement in this field. In this sense, half of the Italian respondents consider administrative barriers in the public sector as one of the most important ones in the EPC market.

-  Institutional barriers. Local authorities usually must face a very restrictive process to get the required cash flows to implement an EPC project. The process is especially hard in some regions of the country. Furthermore, there is a crucial lack of technical background in municipalities.
-  Another key barrier identified for the public sector is the uncertainty of legal and regulatory framework. In this sense, for example, the GSE has stopped the process for the verification of many projects, causing a drop in the number of white certificates and therefore an increase in their prices.

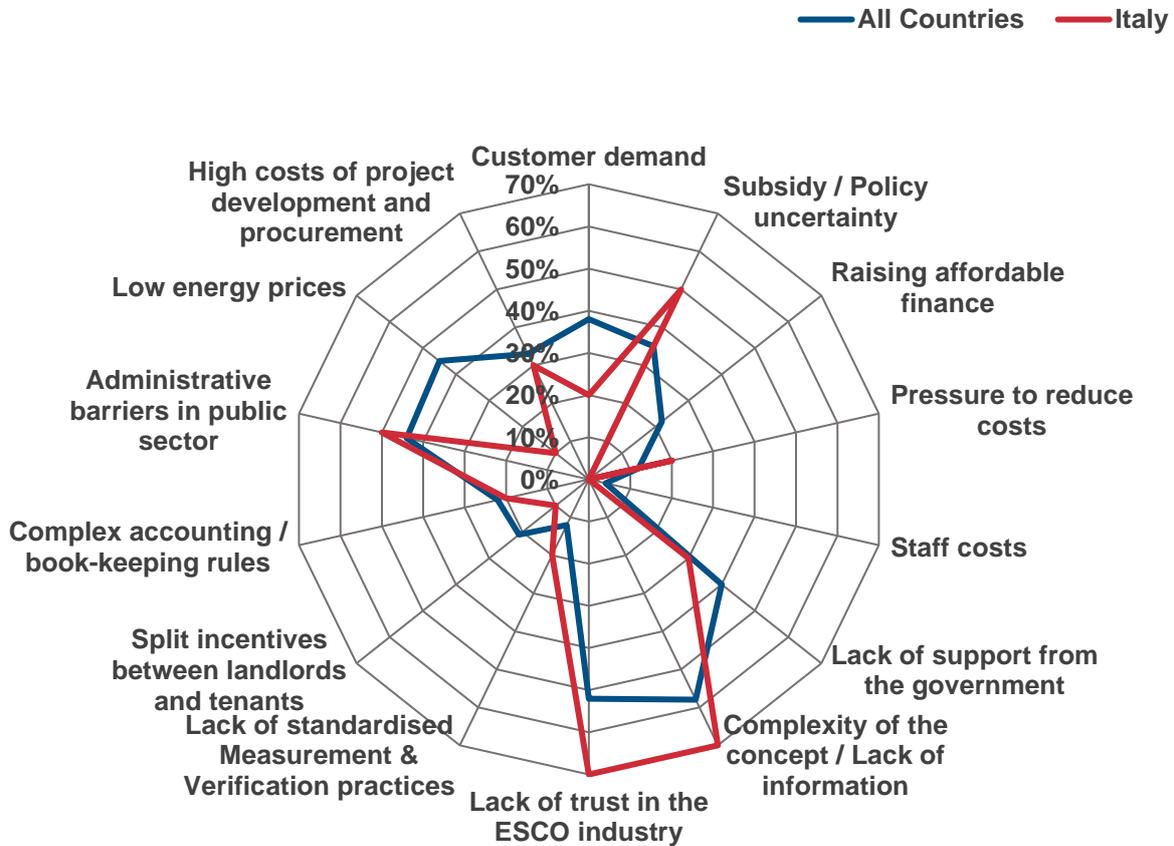
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<sup>9</sup> Joint Research Centre (2017): Practices and opportunities for EPC in the public sector in EU Member States. Pag. 65. <http://publications.jrc.ec.europa.eu/repository/bitstream/JRC106625/kjna28602enn.pdf>

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Figure 11. Based on the activities of the last 12 months: what do you think are the main BARRIERS to the EPC business?



#### 4.6.2 Structural barriers

- ✔ Complexity of the concept. In the Italian market there is general confusion about what projects classify as EPCs. For this reason, contracts that do not meet the requirements to be considered EPCs are classified as such.
- ✔ Lack of trust. This is a generalized problem in EPC markets.
- ✔ Organisational difficulties due to political uncertainty. Some projects have many bureaucratic obstacles that increase transaction costs and limit the size of the EPCs.

#### 4.6.3 Financial barriers

- ✔ Financial institutions don't have the required technical background and capacities to properly assess an EPC project.
- ✔ The credit-worthiness of an EPC provider is a key issue in the financing process, in light of some reports such as "National EPC Market Insight Report" by Trust EPC South.

## 4.7 EPC financing

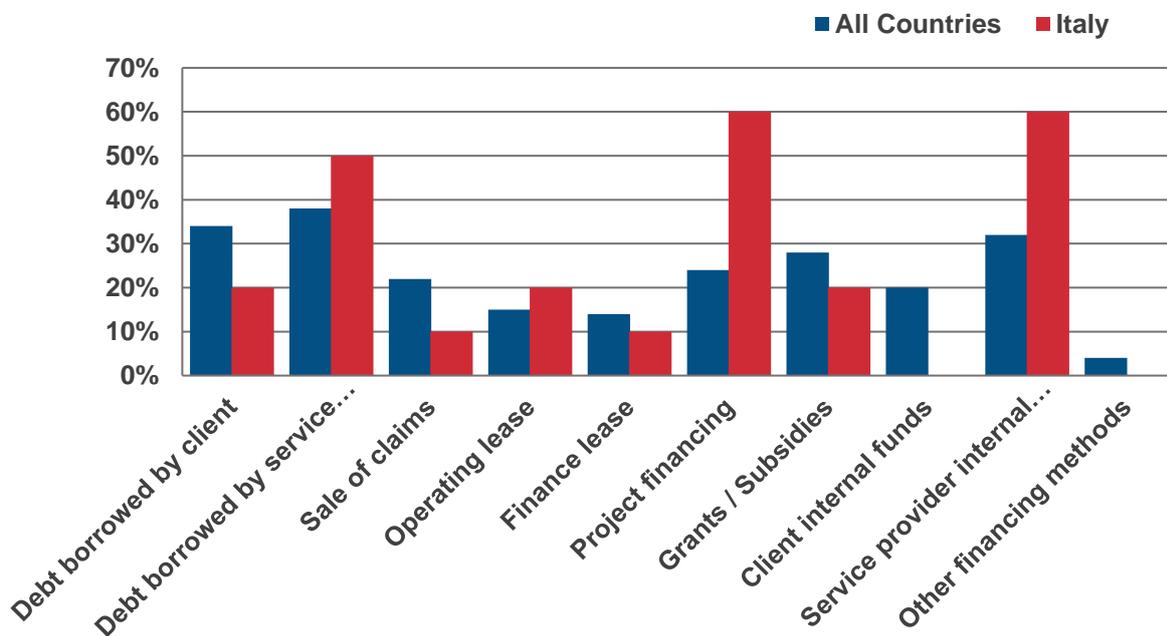
The most common EPC financing approaches are reported to stem from the service provider, either using their own funds or their own debt arrangements, and as well project financing. The prevalence of service provider and project financing as a funding sources for EPCs shows that raising affordable finance is not a particular barrier in Italy, as stated by Italian respondents in Figure 11.

Thus, the main EPC financing sources in Italy are project financing and service provider own-financing. These two formulas are used by the 60% of Italian respondents, which is significantly higher than compared to the All Countries dataset: 35 points above project financing and 28 points above provider internal funds.

It is also common that an EPC provider borrow debt to perform a project. In this line, half of respondents confirm they have financed their project through this method.

On the other hand, according to the survey it is not common for a client to finance a project with internal funds in Italy.

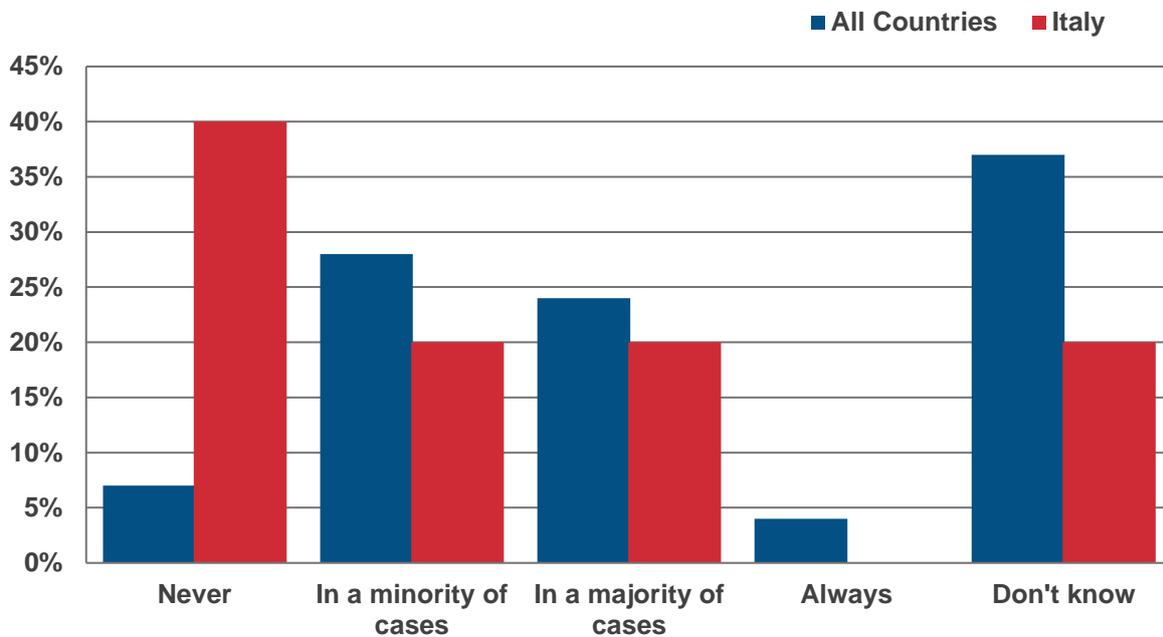
Figure 12. How are the EPC projects you are involved with financed?



Sale of claims – where EPC service payments are sold by the service provider to investors on financial markets – was only selected by 10% of Italian EPC service providers as a financing option for projects they have been involved in (as shown in Figure 12). This is probably due to the fact that 40% of Italian respondents considered that the sale of claims is never accepted as the main collateral for EPC projects. This value is considerably higher than the results from All Countries in the survey (7%).

Twenty percent respondents had no experience on which to judge whether sale of claims is a feasible option in Italy. Even though this percentage may result significant, in fact it is low compared to results from All Countries dataset (37%).

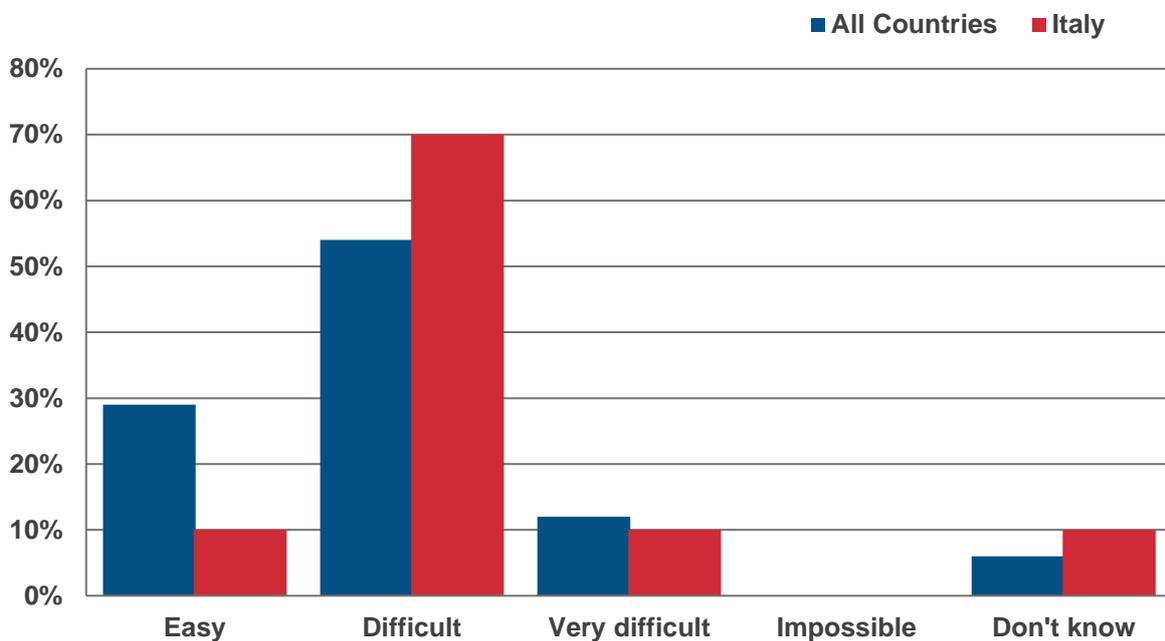
**Figure 13. From your experiences, is the sale of claims (sale of receivables) accepted as the main collateral for EPC projects?**



As stated by Italian respondents in Figure 11, raising affordable financing does not suppose an important barrier in the Italian market. However, as previously mentioned, some financial barriers can be found in the Italian market that constrain the growth of the EPC projects.

This issue is also reflected in Figure 14, where 80% of Italian respondents consider as ‘difficult’ or ‘very difficult’ obtaining viable finance for an EPC project. Still, different financing possibilities can be found in the Italian ESCO market. Here below are the most important ones grouped by ESCO or client financing:

Figure 14. Overall, do you consider that obtaining viable finance for an EPC project is:



#### 4.7.1 ESCO financing

- ✔ Service provider internal funds. These projects are directly financed by the service provider, who assumes all the risks. If committed energy savings are not achieved, then the EPC provider will have to pay the difference between real savings and expected savings with its own funds.
- ✔ Debt borrowed by the service provider: according to the survey, it is the third most extended option in Italy. In this financing scheme, an ESCO takes the whole risk of the project including the financial risk.

#### 4.7.2 Client financing

According to QualitEE survey, clients normally do not finance projects. Only 20% of respondents stated clients have financed their projects by borrowing external debt.

However, when a client is very interested in a project that includes deep renovation measures, meaning the initial investment is very high and the payback period is longer than the duration of the EPC project, then the participation of the client in the project financing process is more usual. This situation is sometimes known as “EPC+”.

#### 4.7.3 Project financing

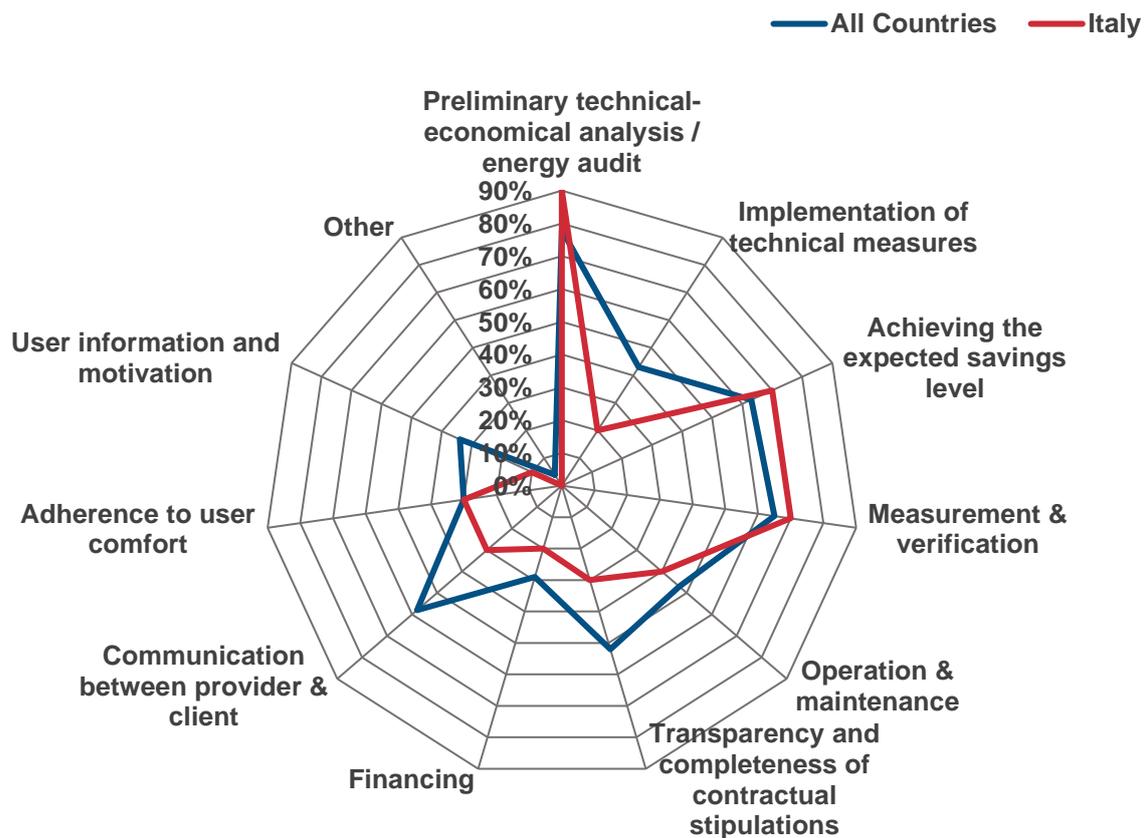
Project financing is one of the preferred options to finance an EPC project in Italy. Project finance bases its collateral on a project’s cash flow expectations, not on individuals or institutions’ creditworthiness. Therefore, the risk of a project is strictly limited to the project itself through this financial method, so that, neither the EPC provider nor the client assume any personal risk that could affect their own finances.

## 4.8 EPC quality determinants

According to the answers of all the Italian respondents, the most important determinant of quality in EPC projects is undoubtedly the preliminary technical-economic analysis and the energy audit required for any EE service (by 90% of respondents). This issue, together with the measurement and verification and achieving the expected savings levels (both selected by 70% of respondents), are key quality aspects in Italy. These three aspects are in line with the respondents across All Countries.

The remaining determinants are not considered as highly relevant. These options were selected by less than 40% of Italian respondents: operation & maintenance (40%); adherence to user comfort (30%); communication between provider & client (30%); transparency and completeness of contractual stipulations (30%); financing (20%); implementation of technical measures (20%); and user information and motivation (10%).

Figure 15. In your opinion what are the most important determinants of quality in EPC projects?

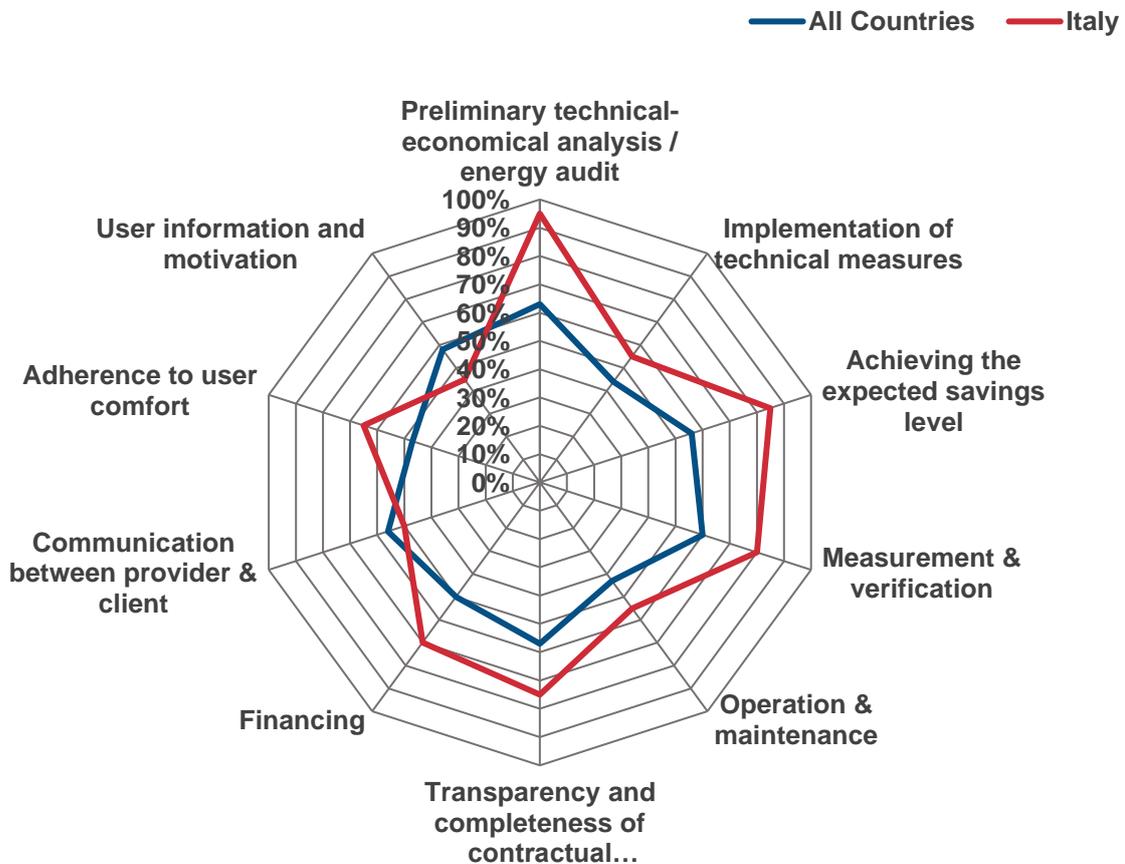


Compared to the All Countries dataset, the bigger differences were found in contractual stipulation and implementation of measures. Whilst these determinants are not very relevant

in Italy, about the half of respondents across All Countries considered them important for EPC projects quality.

As reflected by Figure 16, the quality in EPC project preparation and implementation needs to be improved in almost all areas. In fact, the quality in Italian projects is worse valued than the average from All Countries surveyed, according to respondents' answers.

**Figure 16. In which areas are quality improvement most needed in EPC project preparation and implementation? (Indicator based on rating scale as described in note below - Sept 2017)**



Note: respondents were asked to rank each determinant using the following options 'not needed', 'needed', 'strongly needed' and 'don't know'. An indicator was created by assigning a weighting of 0%, 50% & 100% to 'not needed', 'needed' & 'strongly needed' respectively and dividing by the number of responses. Where 'don't know' was selected this was excluded from the calculation of the indicator.

Almost 100% of respondents agree that the preliminary technical-economic analysis needs to be improved. Achieving the expected savings level and as well measurement and verification also need to be enhanced, according to the opinion of about 83% of Italian respondents.

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If we compare Figures 15 and 16 the three aspects considered as the most relevant to determine the quality of an EPC project in Italy, need to be improved. Thereby, we can conclude that the lack of quality in EPC projects is likely a relevant barrier.

## 5 ENERGY SUPPLY CONTRACTING MARKET

### 5.1 ESC market actors

The actors involved in the ESC market in Italy are:

#### 5.1.1 ESC providers and facilitators

This group includes:

- ✔ **ESC providers:** They are energy providers, and usually owners of renewable energy assets. They have the energy sources and the technical knowledge, but sometimes lack a client portfolio.
- ✔ **ESC facilitators:** Facilitators usually have a broader knowledge of the market and put providers and clients in contact. They can also collaborate in the scheme by drafting the contract and giving technical advice to the client. Consultants or engineering companies are included in this group.

#### 5.1.2 Clients

Clients are usually big companies that require large energy consumption or public bodies such as municipalities. Sometimes, they sign this type of contracts to establish fixed prices therefore avoiding the volatility of energy prices.

#### 5.1.3 Financial institutions

A third party that finances the EPC provider, the customer, or a combination of both.

### 5.2 ESC market developments

This scheme was applied for the first time in Italy in the late 1980s. Nowadays, the utility market has the largest potential since all final users have the need to reduce energy costs while meeting comfort criteria. Of the top 22 utilities in Italy, 18 have an internal division that deals with energy efficiency services; moreover, among the utilities that have set up a dedicated business unit, half have their own certified ESCO. Utilities can leverage their available capital and energy distribution networks to target both the industrial and residential sectors effectively. However, they have not yet developed specific expertise in energy efficiency<sup>10</sup>.

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<sup>10</sup> Italian Energy Efficiency Action Plan (06/2017). Pag. 36.

[https://ec.europa.eu/energy/sites/ener/files/documents/it\\_eeap\\_2017\\_en.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/it_eeap_2017_en.pdf)

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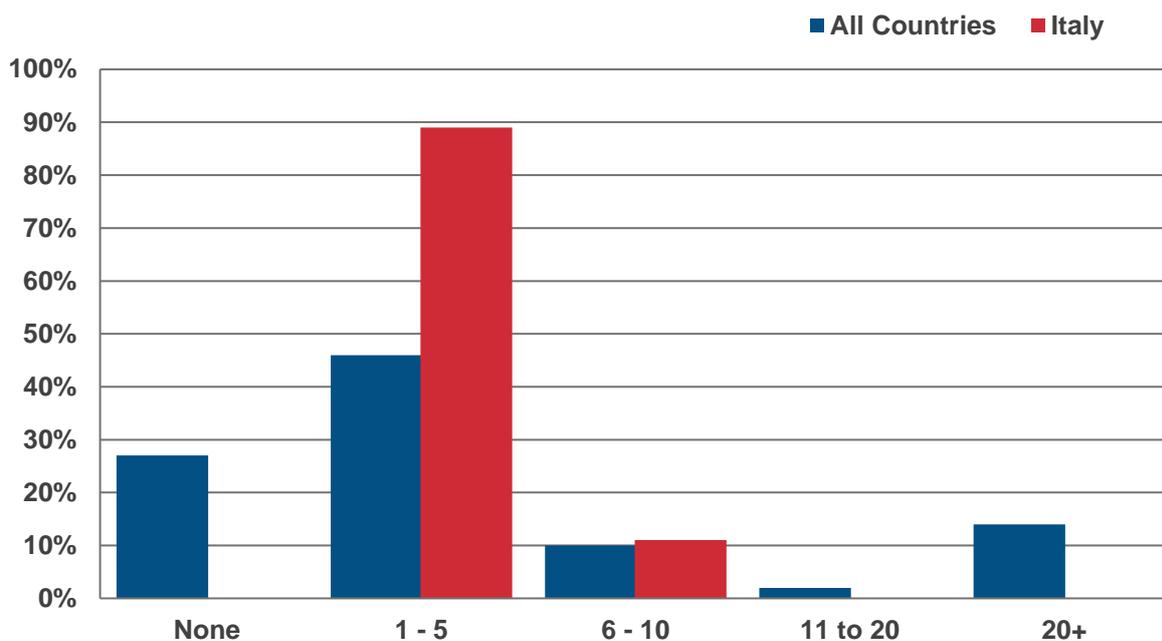
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Among different types of ESCs, the most common ones are the “heat supply contracts”, which include measures for renovating heating and cooling systems. In addition, there is a more modern version, the “Energy Service Plus Contract”, which includes a commitment by the provider to reduce at least 10% of the consumption of primary energy for winter heating, as well as the installation of a temperature control system<sup>11</sup>.

One hundred of ESCOs companies are estimated to have provided ESCs among their services as of 2016, including the 18 utilities previously mentioned. Therefore, the majority of companies are small and medium-sized enterprises.

Focusing on the survey, almost 90% of Italian respondents have been involved in one to five ESC projects, which almost doubles the average from the All Countries dataset (45%). The remaining Italian respondents have signed between six and 10 projects.

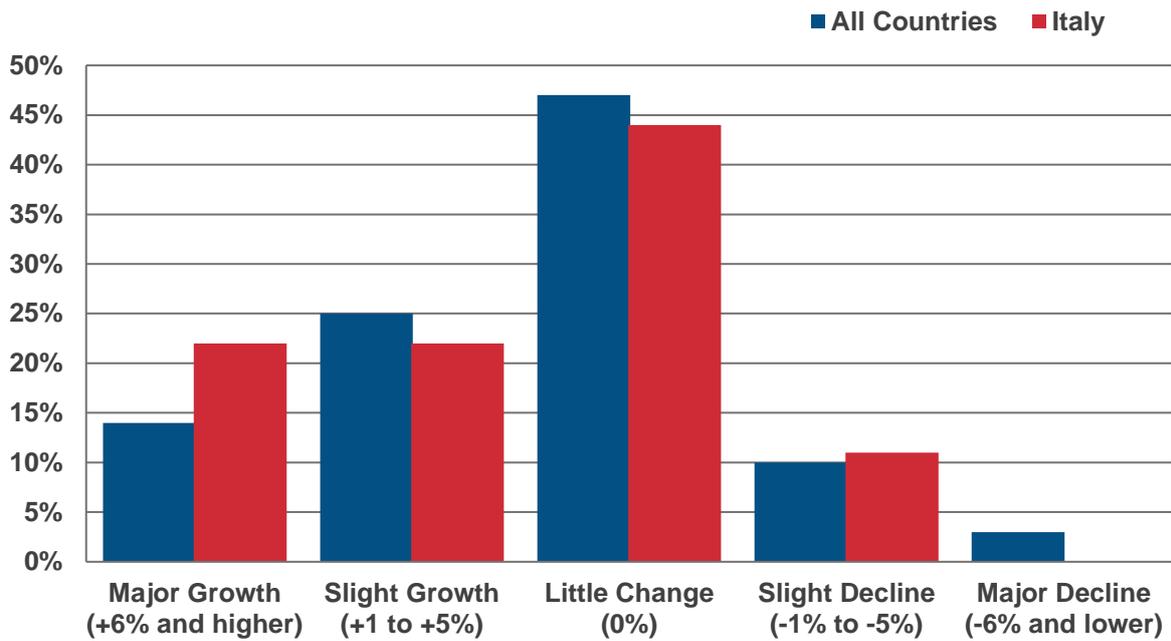
**Figure 17. How many ESC projects (that have reached ESC Contract Signature) has your organisation initiated / become involved with in the last 12 months?**



<sup>11</sup> Joint Research Centre (JRC) (2017): Energy Service Companies in the EU, page 121.  
<http://publications.jrc.ec.europa.eu/repository/bitstream/JRC106624/kjna28716enn.pdf>

According to Figure 18, almost 45% of Italian respondents stated that their orders have not changed in the last year. Another 45% perceived a growth in their orders, while the remaining 10% of respondents stated that their orders have dropped. These numbers are in line with the view across All Countries in the survey.

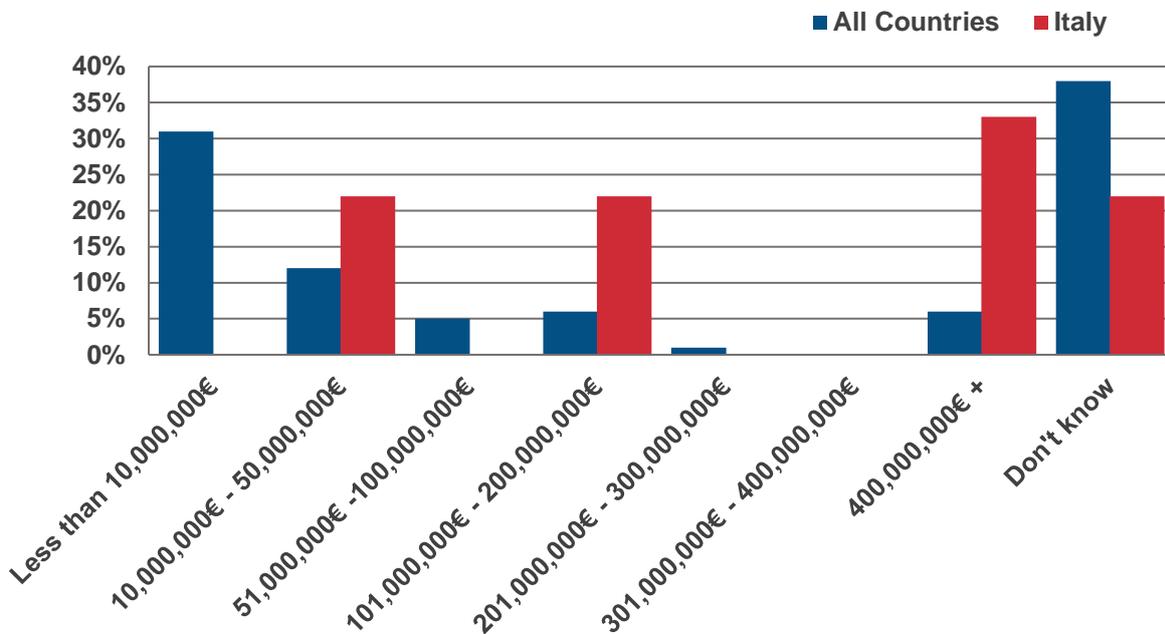
Figure 18. In the last 12 months your ESC orders have seen:



Opinion is split in terms of the market size for ESC in Italy and unfortunately these results provide no useful guide to the overall revenues generated. This suggests that there is a lack of reputable information on the subject available to ESC providers and facilitators, but also that there may be an issue in what is understood by the energy supply contracting market by Italian stakeholders.

A direct relation between the investment outlays of projects, in which providers and/or facilitators have been involved (Figure 21), and the market estimation has been noted. Thus, those Italian respondents with higher market estimations are the same that have been involved in projects with higher investment outlays.

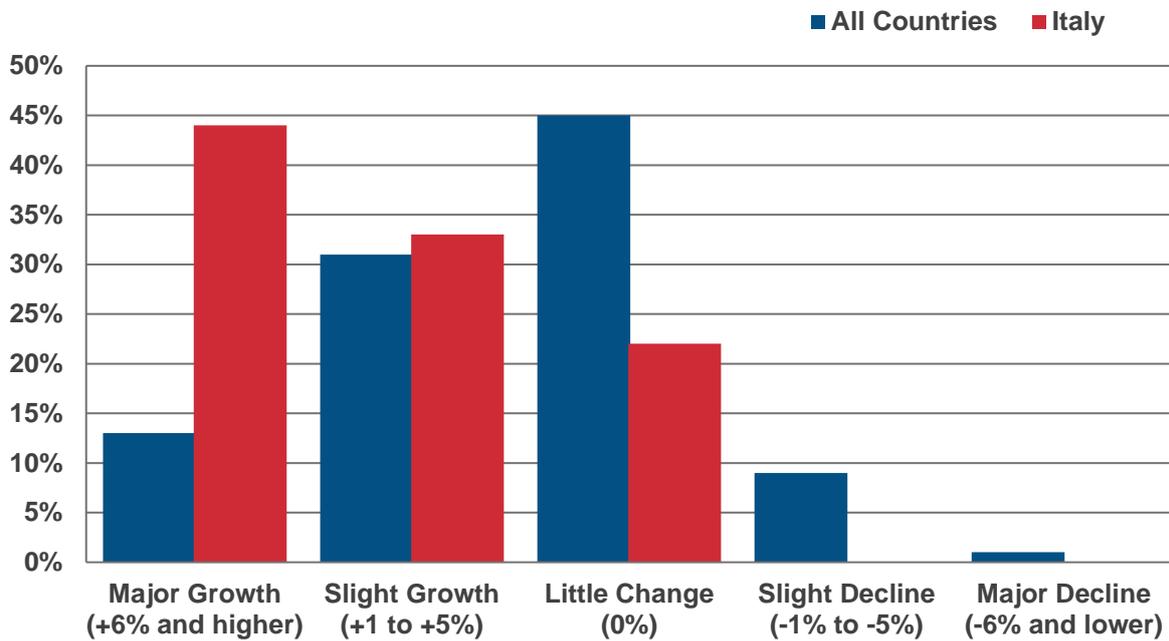
**Figure 19. Roughly how much revenue do you think the ESC market in your country generated in 2016?**



According to Figure 20, 77% of respondents think the ESC market in Italy has experienced growth in the last year. The remaining respondents considered that the market has not changed.

The proportion of providers and facilitators that estimate a major growth in the ESC market is much higher in Italy (44%) than across All Countries surveyed (13%) except for Slovenia that stands at the top of the ranking.

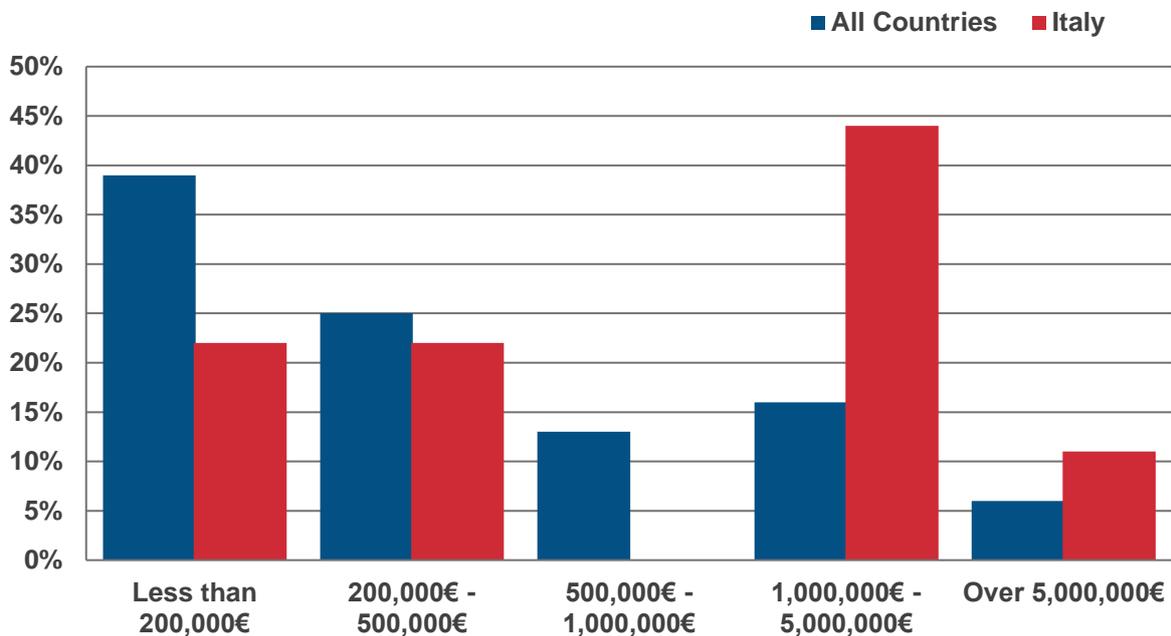
Figure 20. Over the last 12 months, the market for ESC in your country has seen:



### 5.3 ESC business models

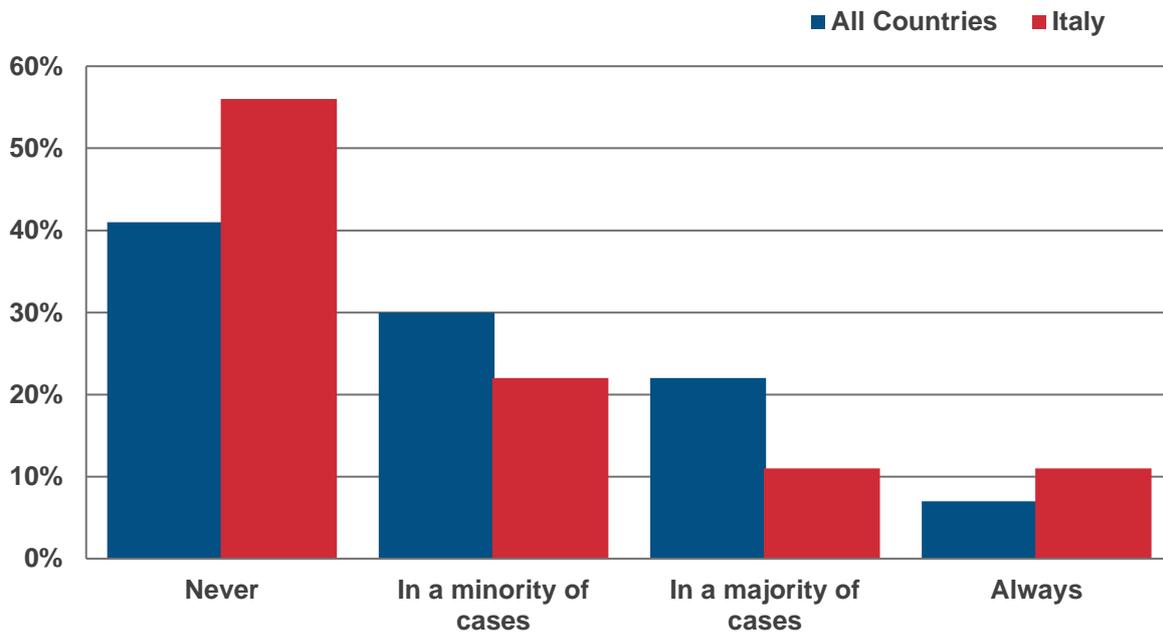
According to the survey, most of the Italian respondents are involved in ESC projects with an investment outlay between one and five million, which is almost three times compared to the All Countries dataset for the same range. On the other hand, 44% of respondents stated that the value of the projects is under EUR 500,000. It is also remarkable that Italian responses on projects with a value over the five million double the responses across All Countries surveyed.

Figure 21. What is the most common overall value (investment outlay) of the ESC projects you are involved in?



Regarding Figure 22, most answers from Italian respondents (56%) pointed that payments per unit of energy delivered are never delivered in combination with payments per unit of energy saved, in line with the answers across All Countries (41%). On the other hand, 11% of responses stated that these two payment systems are always combined.

**Figure 22. In the ESC projects you are involved in, were payments per unit of energy delivered in combination with payments per unit of energy saved (from installed energy efficiency measures)?**



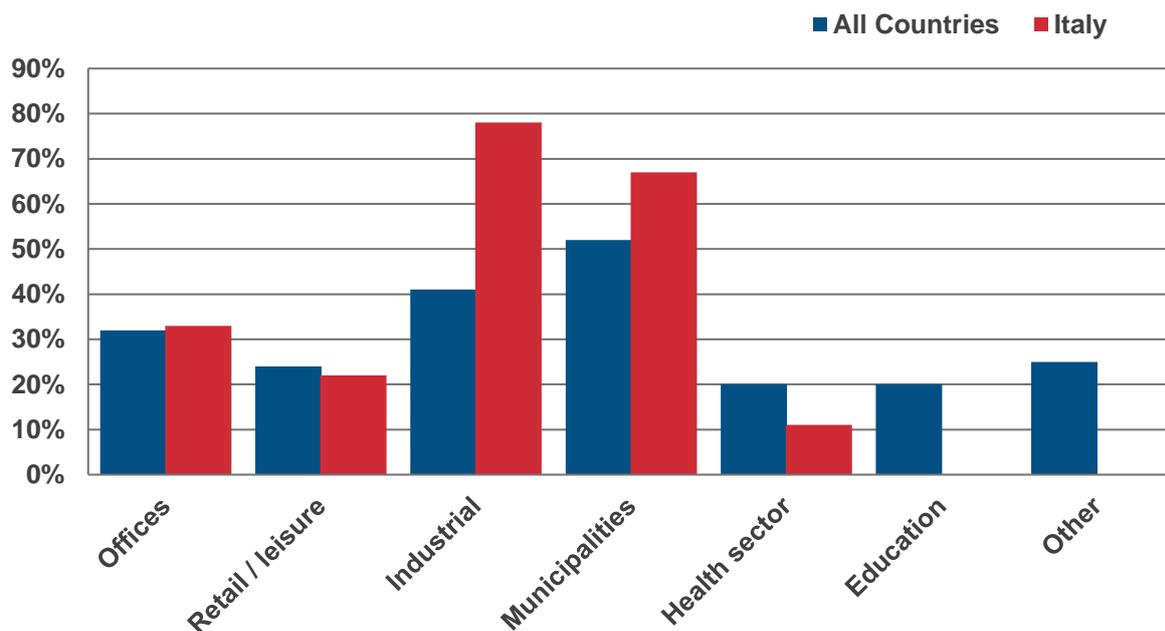
## 5.4 ESC market sectors

In Figure 23, we can see that most of ESC clients come from the industrial sector and municipalities, similarly to results for EPC. These two are the main target for energy efficiency services in Italy.

Almost 80% of Italian respondents have some industrial client. Municipalities are in the second place of the ranking: 67% of Italian respondents confirm to have them among their clients.

Italian results for offices and retail are similar to those from All Countries dataset. However, in the public sector - excluding municipalities - there are not as many ESC projects as in All Countries. Only 10% of Italian respondents have a health institution among their clients. Similarly, to responses on EPC clients, the education sector is not an important target for this type of service in Italy, according to the survey.

Figure 23. Which sectors do your ESC clients generally come from?



## 5.5 ESC market barriers

Across All Countries in the survey, 'Lack of trust in the ESCO industry', 'Lack of support from the government' and 'Customer demand' were selected as the top three barriers. Similarly, 'lack of trust in the ESCO industry' was also pointed as one of the main barriers by 67% of Italian respondents. However, 67% of Italian respondents cited pressure to reduce costs as another important ESC business barrier to consider, while this was not perceived as a very relevant barrier by respondents across All Countries. The lack of standardized Measurement and Verification (M&V) practices is a significant barrier in Italy to the ESC business too.

### 5.5.1 Regulatory and administrative barriers

These barriers are the same as EPC ones, since legislation and procurement processes are similar in both cases:

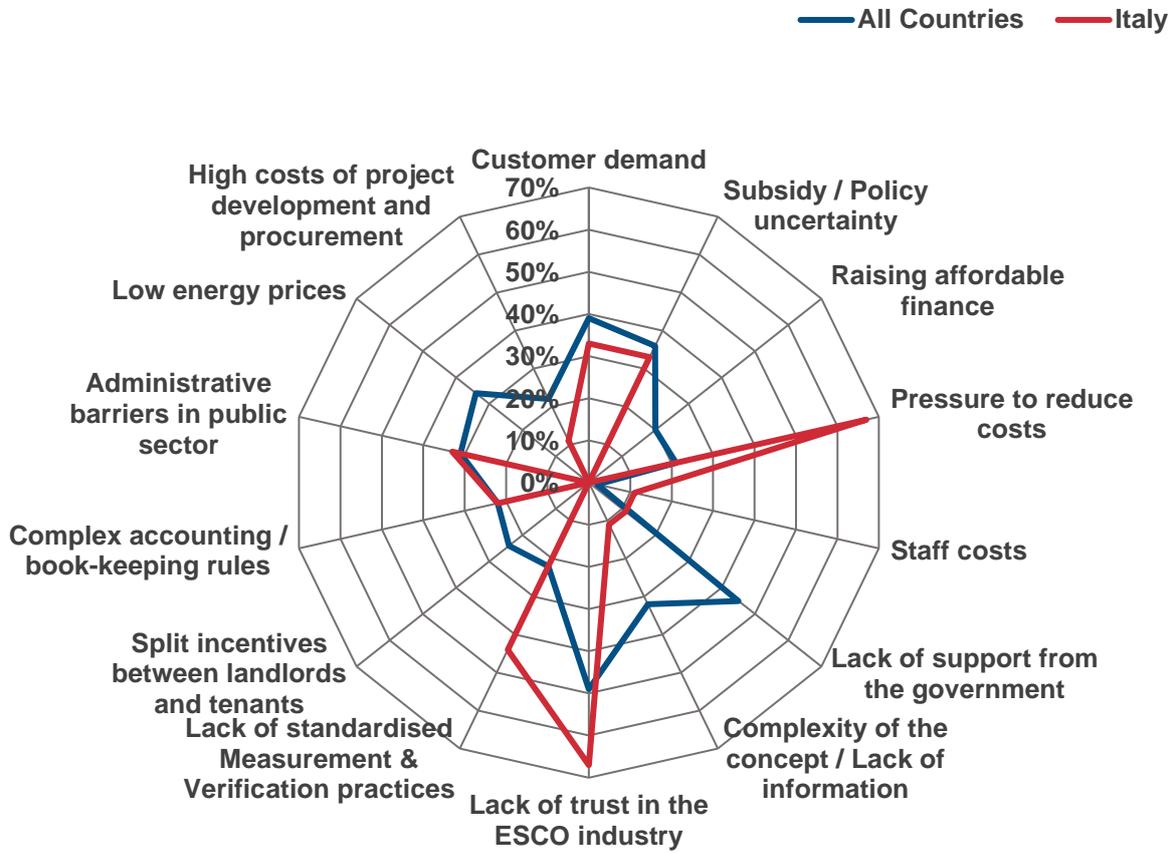
- ✔ Administrative barriers. Again, the problem is the process that local authorities usually must face to get the required cash flows.
- ✔ Subsidy/Policy uncertainty.

### 5.5.2 Structural barriers

The structural barriers are key barriers for the growth of energy supply contracts. The main ones as perceived by Italian respondents are as follows:

- ✔ The lack of trust in the ESCO industry remains as one of the most important barriers in Italy, not only for EPC but also for ESC.
- ✔ The pressure to reduce costs is perceived as one of the main barriers for the ESC business. While only 21% of respondents across All Countries have perceived the pressure to reduce costs as a barrier, in Italy the percentage of respondents with the same perception is up to 67%.
- ✔ The lack of standardised M&V practices in the country; which cause that each agent uses his or her own criteria in the M&V process.

Figure 24. Based on the activities of the last 12 months: what do you think are the main BARRIERS to the ESC business?



## 5.6 ESC financing

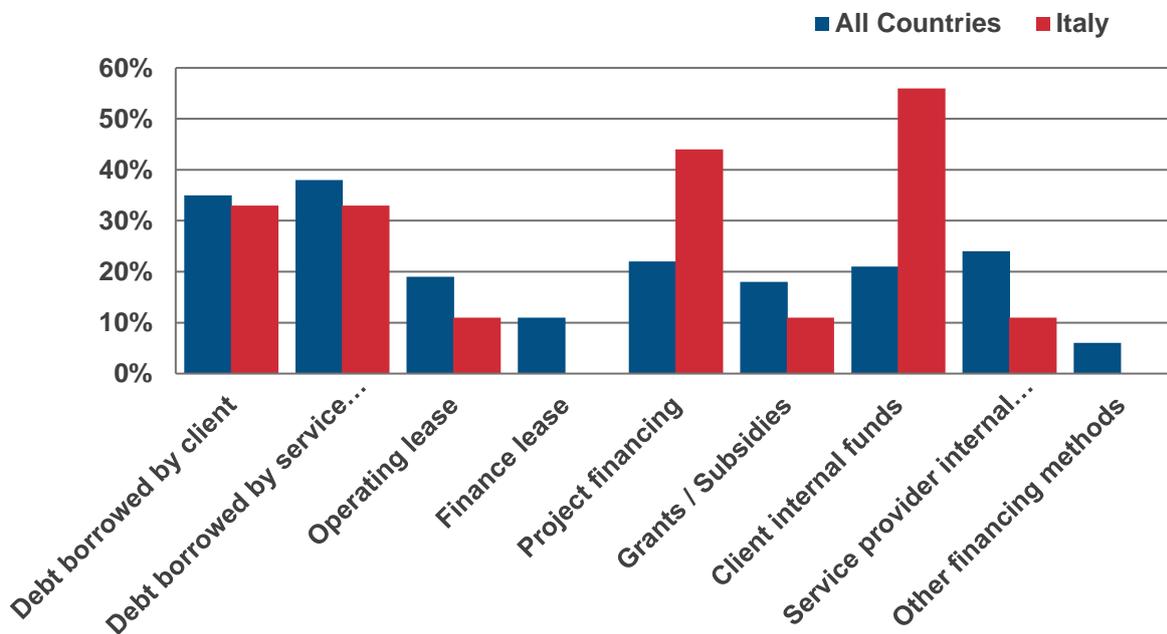
According to the survey, ESC projects are usually financed by the client in Italy, unlike EPC projects. Fifty-six% of Italian respondents confirmed their projects are financed by client’s internal funds, and 33% stated their clients have financed projects by borrowing debt.

Actually, Italy is the country among those surveyed with the highest value in client internal funds financing. This way of financing, although not very common in the rest of the countries surveyed, is frequently used in Italian ESC projects.

Project financing also appears in the second place in the ranking of financing in Italy. Forty-four percent of Italian respondents finance their projects throughout project financing, including special purpose vehicles (SPV) that are created for a specific project.

Debt borrowed by the service provider is also another important way of financing. Thereby, 33% of respondents indicated that they use this system. This financing mechanism is widely extended in All Countries surveyed.

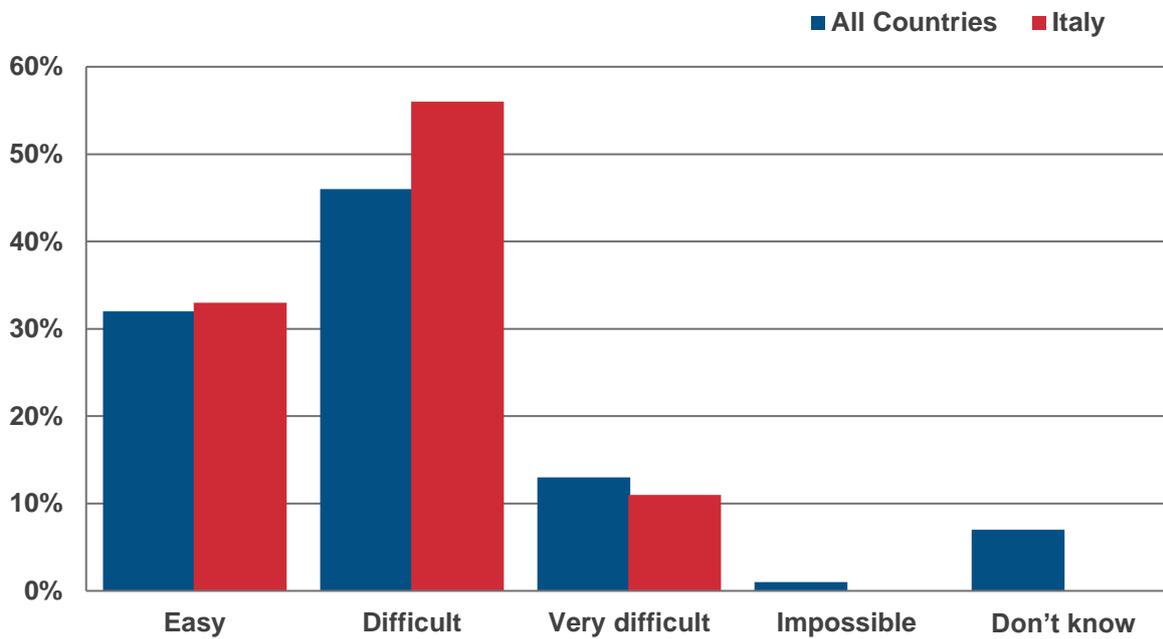
Figure 25. How are the ESC projects you are involved with financed?



In general, it seems more difficult to obtain financing in Italy than across All Countries. Fifty-six per cent of Italian respondents agree that obtaining viable finance is difficult, and another eleven per cent state it is very difficult, similarly to All Countries dataset (45% and 12% respectively).

If we compare Figures 26 and 24, despite the apparent difficulty to find viable finance for an ESC projects, surprisingly affordable financing is not considered as a barrier at all in the country for any of the respondents.

Figure 26. Overall, do you consider that obtaining viable finance for an ESC project is:



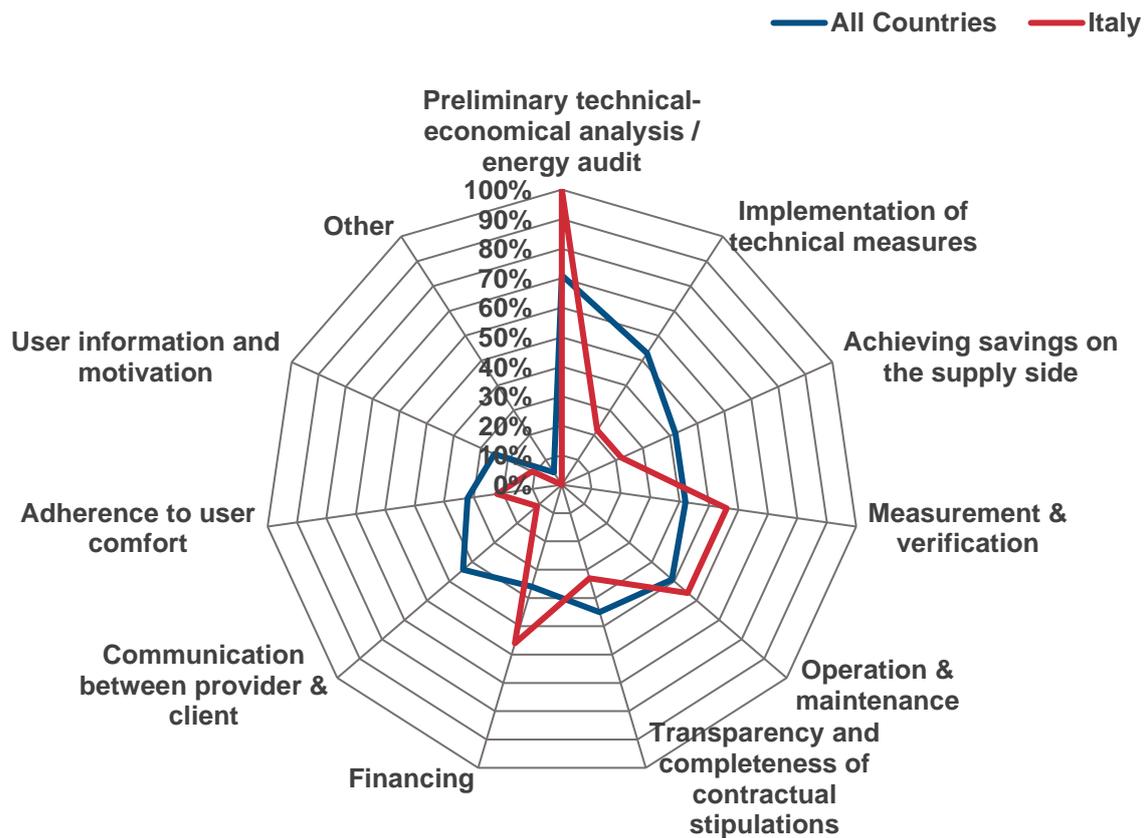
## 5.7 ESC quality determinants

According to the answers of the survey, we can conclude that the Italian ESC market is more demanding compared to All Countries, especially in areas related to technical and financial aspects, such as preliminary technical-economical analysis, M&V, O&M and Financing.

The key issue to determine the quality of a project is the preliminary technical-economic analysis and the energy audit. All Italian respondents think this is the most important determinant to consider, which is considerably more than across All Countries dataset (70%).

On the other hand, some aspects related with the user (such as communication between provider and client or user information) are not considered key in the quality of the service provided.

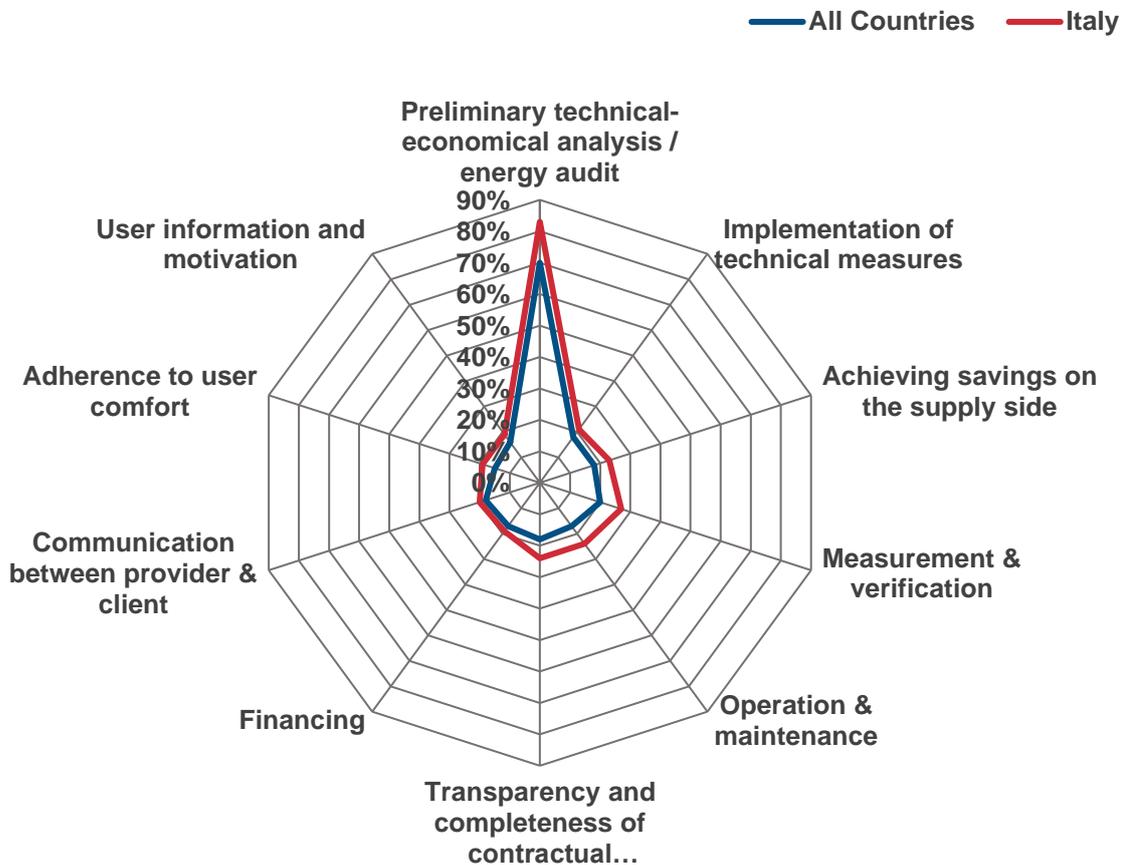
Figure 27. In your opinion what are the most important determinants of quality in ESC projects?



As previously stated, 100% of Italian respondents declared that the key quality determinants are the preliminary technical-economic analysis and the energy audit. However, in Figure 28, 83% of respondents pointed that precisely this area needs to be improved.

Ultimately, ESC providers perceive an objective and standardized preliminary technical-economic analysis and an energy audit as necessary for the improvement of the ESC. On the other hand, the need to improve the preliminary analysis is probably related to the lack of trust on this scheme, which is the most significant barrier for the ESC business.

**Figure 28. In which areas are quality improvement most needed in ESC project preparation and implementation? (Indicator based on rating scale as described in note below - Sept 2017)**



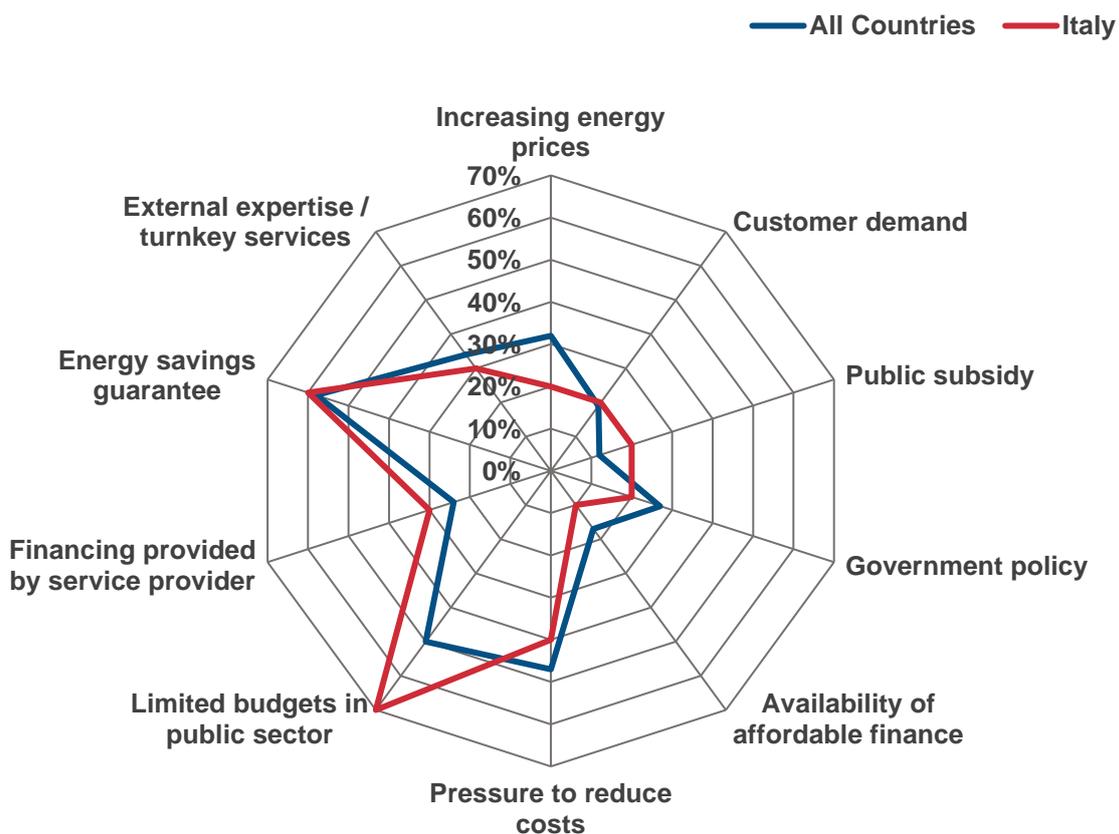
Note: respondents were asked to rank each determinant using the following options 'not needed', 'needed', 'strongly needed' and 'don't know'. An indicator was created by assigning a weighting of 0%, 50% & 100% to 'not needed', 'needed' & 'strongly needed' respectively and dividing by the number of responses. Where 'don't know' was selected this was excluded from the calculation of the indicator.

## 6 RECOMMENDATIONS TO SUPPORT MARKET DEVELOPMENTS

According to Italian respondents, and as represented by Figures 29 and 30, the main driver for the EPC and the ESC businesses is limited budgets in the public sector, with a 70% response. This answer is 20 points above the one given by respondents across All Countries in the survey regarding EPCs and 43 regarding ESCs.

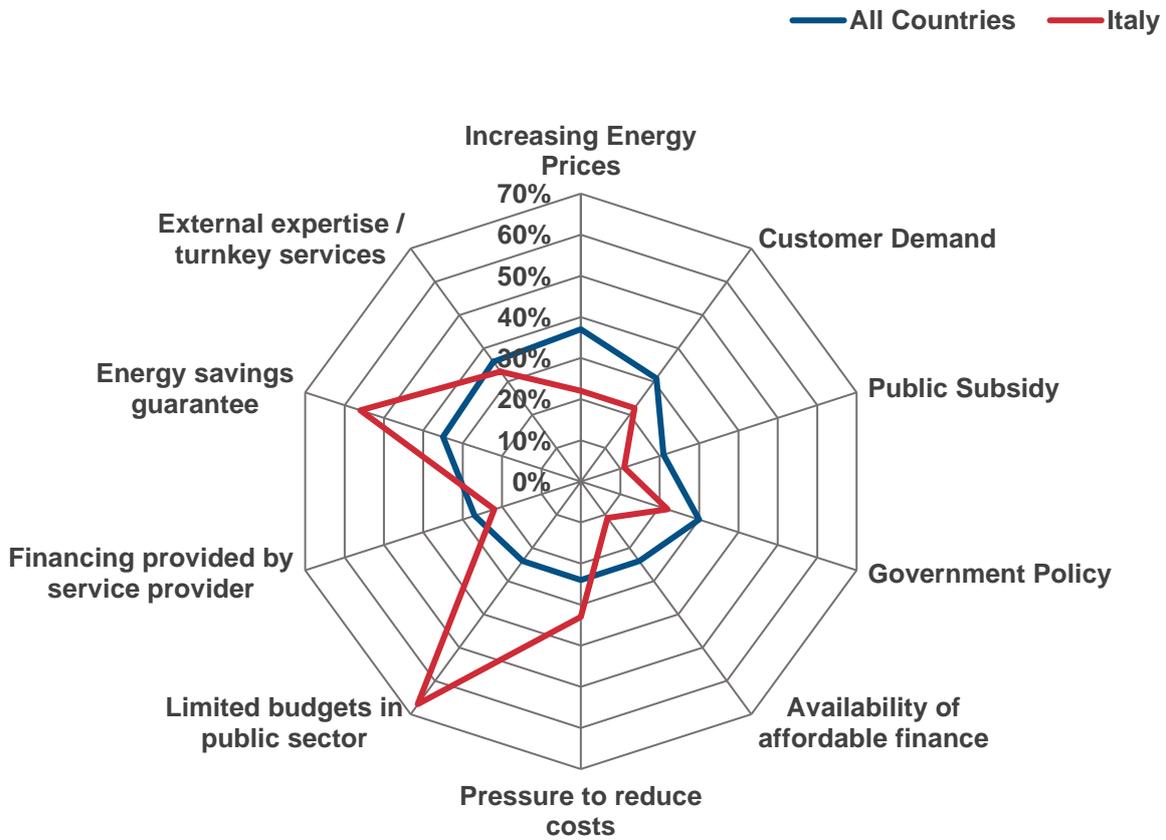
Limited public-sector budgets are perceived as a driver because they present a business opportunity for the main players in the EES market. Since the costs of implementing energy efficiency measures are usually undertaken by the provider, the Public Administration will not be affected monetarily and will tend to take advantage of the services offered.

Figure 29. Based on the activities of the last 12 months: what do you think are the main DRIVERS of the EPC business?



Another relevant driver in EPCs and ESCs, this time for both Italy and All Countries, is energy savings guarantee (60% both). The third most relevant driver for EPC and ESC businesses is pressure to reduce costs, according to answers obtained from Italian respondents. By implementing an EPC/ESC project, the EES clients renovate their facilities and benefit from newer equipment with no investment required and no risks associated.

Figure 30. Based on the activities of the last 12 months: what do you think are the main DRIVERS of the ESC business?



Activities listed in this chapter are meant to help overcome the barriers of EES market development in Italy identified in chapters 4 and 5 and summarised in Table 1 below. The activities relate to individual stakeholders and are listed in the Table 2 below. It is clear that these activities interrelate with each other and therefore must be dealt with together, not separately.

**Table 1: Overview of key EES market barriers**

Market barrier		EES affected
1	Lack of trust in the ESCO industry	EPC, ESC
2	Complexity of the concept	EPC
3	Lack of information	EPC
4	Subsidy	EPC
5	Policy uncertainty	EPC
6	Lack of standardised M&V practices	ESC
7	Pressure to reduce costs	ESC

Table 2: Overview of actions to overcome market barriers

Response to barriers	Actions	Who should act	Target groups	Description	
1	1, 2, 3, 4, 5, 7	Seminars, conferences, roundtables	EPC facilitators, EPC providers, FIRE, FEDERESCO and ASSOESCO	EPC customers, decision makers, financial institutions, experts, media	The goal is to inform about the possibilities and benefits of the EPC method
2	1, 2, 6	Training for new EPC providers	FIRE, FEDERESCO and ASSOESCO, EPC facilitators	New EPC providers	The goal is to sustain the high quality of EPC projects and promote the use of the Code of Conduct for EPC
3	1, 2, 3, 5	Implementation of the European Code of Conduct for EPC	FIRE, FEDERESCO and ASSOESCO, EPC providers	EPC providers, clients	The goal is to promote the implementation of a basic set of values and principles that are considered fundamental for the successful, professional and transparent implementation of EPC
4	1, 2, 3, 6	Promotion of best practices in EPC	FIRE, FEDERESCO and ASSOESCO, EPC providers	Potential clients, experts, media	This activity is an integral part of other dissemination activities
5	1, 4, 5, 6, 7	Certification of EES	FIRE, FEDERESCO, ASSOESCO, EES providers	EES providers, facilitators, clients	The goal is to sustain and guarantee the high quality of EPC projects
6	4, 5	Discussion, talks and networking	FIRE, FEDERESCO and ASSOESCO, EPC and ESC providers	Decision-makers (e. g. Ministry of Industry and Trade, Ministry of Finance, etc.)	The objective is to promote the EPC method as one of the governmental strategic goals in energy and growth policy
7	1, 2, 5	Creation of a more concrete legal framework for EPC	Policymakers, FIRE, FEDERESCO and ASSOESCO	Society and EE sector	The objective is to create a well-defined legal framework to reduce the uncertainty, as this is one of barriers identified for the EPC scheme. These new rules would also enhance the sector by generating trust in the market actors.

### 6.1.1 Regulation and standardisation

- ✔ Removal of legislative and administrative barriers: incrementing the knowledge about energy efficiency services and the positive outcomes attached to them is crucial for their development and removal of legislative and administrative barriers. For that reason, taking advantage of the communication strategy to be executed could be highly beneficial.
- ✔ Contract templates / procedures: there is an established model contract in the Italian EPC market drawn up by ENEA that is mandatory for Public-Private contracts. One of the technical criteria established by QualitEE is to implement specific clauses in EES contracts.
- ✔ Governmental strategy / Action plans to use EPC on public buildings etc: although there are some energy related national plans in Italy, pressuring the government to implement more specific and effective energy efficiency actions could enhance the sector.
- ✔ Certification - quality assurance system: in Italy, white certificates attest that a certain amount of energy consumption has been attained. Through the above mentioned exclusive workshops, national quality standards will be further implemented.

### 6.1.2 Financial instruments

- ✔ Subsidy programmes: workshops with key stakeholders will be carried out to allow them to fully comprehend the advantages presented by the EES market, which will hopefully increment their interest to become players.

### 6.1.3 Information dissemination, education and networking

QualitEE will carry out public workshops that will facilitate the comprehension of EESs, exposing the many advantages of EPCs and ESCs. Press releases and newsletters about the market will also be facilitated to non-partner countries.

## 7 CERTIFICATION OF ENERGY EFFICIENCY SERVICES

### 7.1.1 General framework for certification of products and services

Under the European Regulation no. 765/2008, Accredia is the only national accreditation body designated by the Italian government to certify the competence, independence and impartiality of the certification, inspection and verification bodies. Accredia is a recognized association that operates as a non-profit entity, under the supervision of the Ministry of Economic Development.

UNI - Italian National Unification Body - is a private non-profit association recognized by the State and the European Union, that for almost 100 years has been developing and publishing voluntary technical standards - the UNI standards - in all industrial, commercial and tertiary sectors.

UNI represents Italy in the European standardization organizations (CEN) and worldwide (ISO) and organizes the participation of national delegations in the work of supranational standardization.

Furthermore, there are some private entities working on the certification field. They usually develop their own quality standards, and certify that others meet those quality criteria.

### 7.1.2 Certification of products and services in the energy sector

Accredia, as the national body, accredits what bodies are allowed to certify Energy Service Companies under the UNI CEI 11352. This standard outlines the minimum requirements for energy efficiency services and the capacities (organizational, diagnostic, planning, management, economic and financial) that the ESCo must possess to offer these activities to its customers: it also assigns a checklist for the verification of the capacities of the ESCo.

Moreover, UNI has published several standards related to the energy sector. The most important ones are:

-  UNI CEI EN ISO 50001. Energy management systems - Requirements with guidance for use. This standard establishes the requirements that an Energy Management System must meet to make continuous and systematic improvements in the energy performance of organizations.
-  UNI CEI 16247-1 specifies the criteria related to general requirements of energy diagnostics. The standard applies to all forms of companies and organizations, with the exclusion of individual residential real estate units.

All the transpositions of European Directives on energy efficiency must also be considered. In this sense, energy labelling on electric products aims to scale up investments in energy-efficient products.

### 7.1.3 Certification of energy efficiency services

Despite being one of the largest energy efficiency markets in Europe, no energy efficiency services certification has been identified in the Italian market.

The most similar credential is the Energy Performance Certificate (APE), which since 2013 has replaced the previous certificate of energy efficiency. This certificate indicates the energy performance and the energy efficiency rating of buildings, houses or apartments, classifying them with a scale from "A4" for the most energy-efficient properties to "G" that identifies properties with poorer energy efficiency.

At the time of purchase or rental of a property, in addition to being mandatory, it is useful to inform about energy consumption and clarify the real value of buildings with high energy savings. Besides this, APE allows citizens to compare constructions in a cost/benefit balance.

Furthermore, a general approach to energy savings and energy efficiency calculations using standard methods has been passed and established in Italy by means of UNI CEI EN 16212:2012.

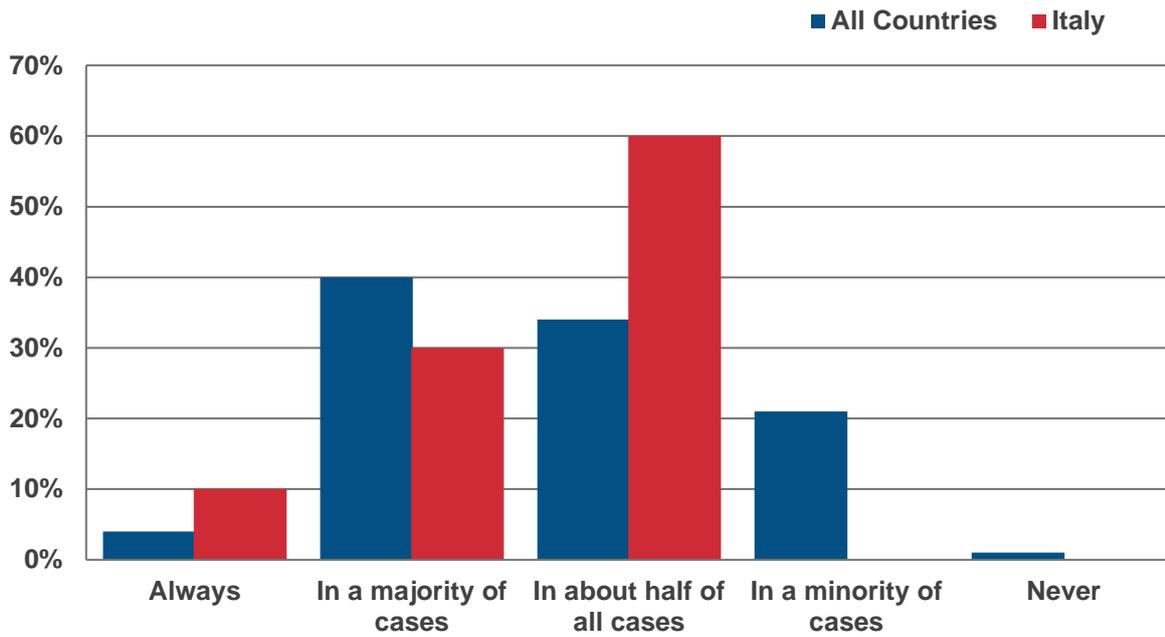
On the other hand, there are some initiatives within the EU's Horizon 2020 programme framework that are developing certificates applied on energy efficiency services in order to enhance trust in the ESCO industry. Two examples are the projects named Trust EPC South or Investor Confidence Project.

The purpose of Trust EPC South is to scale up investments in energy efficiency in the tertiary sector of southern European countries. The consortium of this project has developed the GREPCon service, which includes a technical and financial assessment and provides a standardized and independently verified approach to the identification and quantification of energy saving measures in tertiary sector buildings. The correct use of the service will issue an objective report certified by Bureau Veritas that will establish whether or not the project is viable.

The Investor Confidence Project (ICP) has developed standards on how energy efficiency projects should be developed, documented and measured. Even though there are no Italian representatives in this project, some companies in the country are certified by ICP.

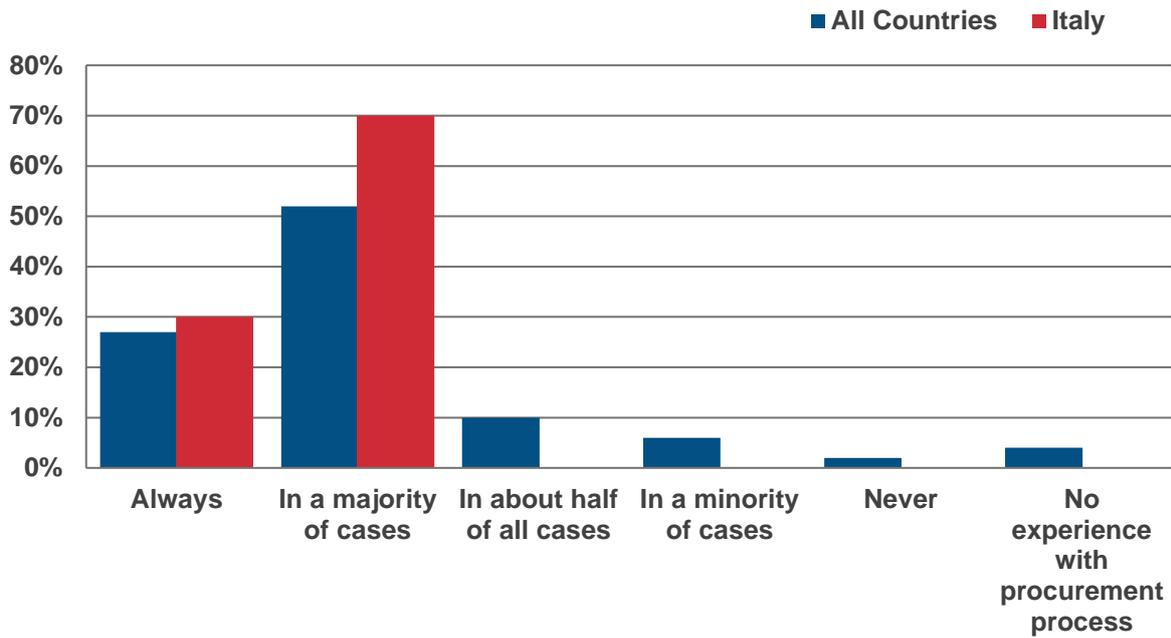
While a part of All Countries (40%) and Italian respondents (30%) feel that in a majority of cases there is a lack of trust, the majority of the Italian respondents (60%) answered by about half of the cases. Although a lack of trust in EPC/ESC services providers is perceptible in Italy, the outcome of the question is positive for the overall confidence in the projects.

Figure 31. In your experience, is there a lack of trust in EPC/ESC service providers?



All the Italian respondents participating in the survey and 80% of those across All Countries answered that well defined procurement specifications would increase the quality level of EPC/ESC services in all or a majority of cases. So many unanimous answers show that this is an important part of the quality of EPC/ESC projects.

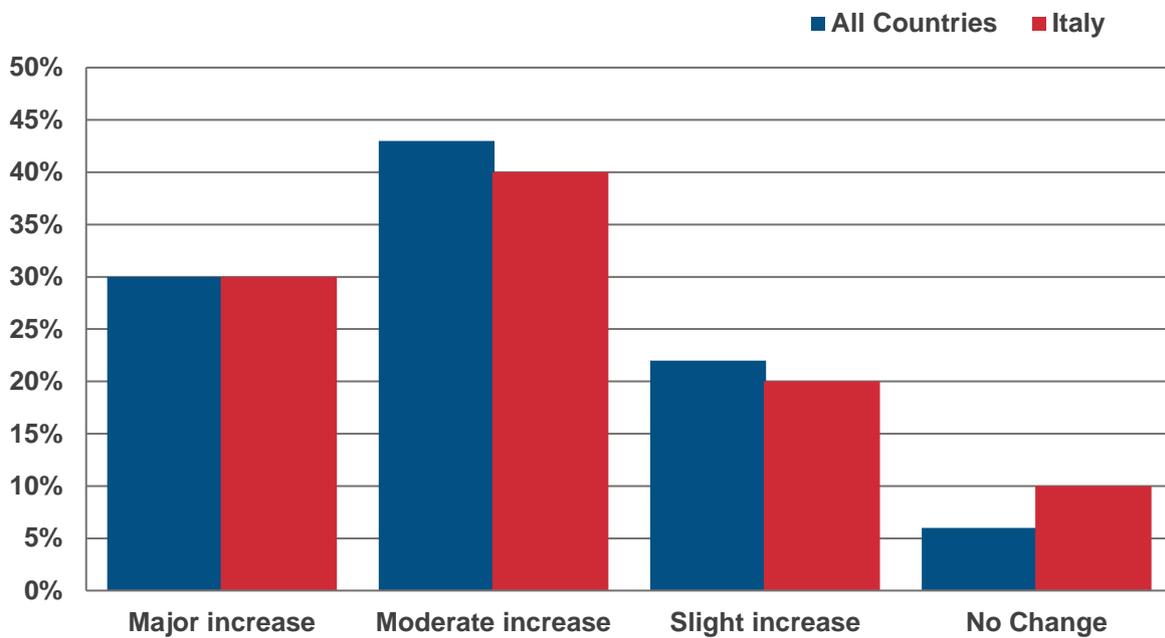
Figure 32. From your experiences, do well defined procurement specifications increase the quality level of EPC/ESC services?



Regarding the consequences of implementing a quality assurance scheme, Italian responses are in the same line as All Countries results. In general, a quality certificate would increase trust in ESCO industry. Only 10% of Italian respondents think a quality assurance scheme would not have any impact.

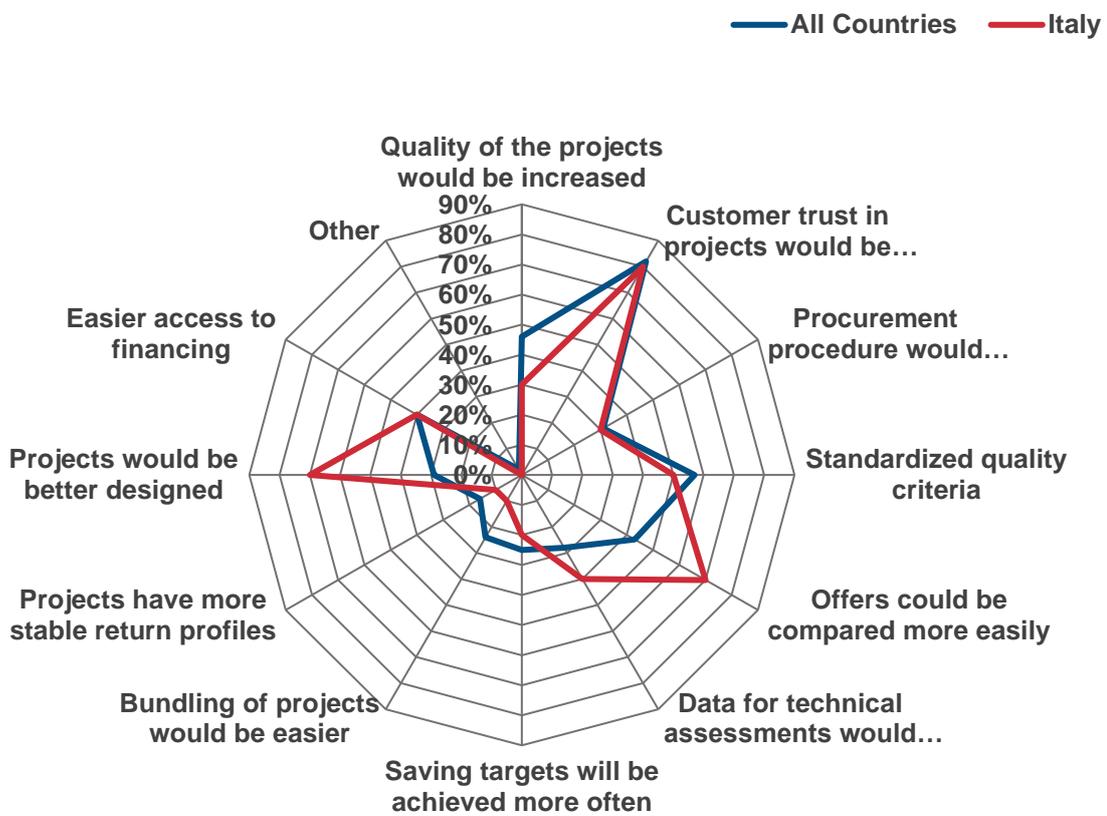
Most of survey respondents in Italy (70%) identified that a quality assurance scheme would cause a major or moderate increase in customer trust in EPC/ESC services and providers. This value is almost identical to the one obtained from the All Countries dataset. This quality assurance scheme would help alleviate one of the most relevant barriers in the sector.

**Figure 33. To what extent would a quality assurance scheme increase client trust in EPC/ESC services and providers?**



A quality scheme would bring another two advantages to the Italian EES market; offers could be compared more easily and projects would be better designed. This is in stark contrast to the picture across All Countries, where only 43% and 29% respectively of respondents considered them as added value. In general, the Italian market would perceive higher change in added value by the implementation of a quality scheme than respective markets in All Countries, as reflected by Figure 34.

**Figure 34. In your opinion, what would be the added value of a quality assurance scheme like this?**



The two main barriers that may be created by a quality assurance scheme like this would be - according to Italy and All Countries responses - additional costs of assurance scheme and additional costs to fulfil the quality requirements.

Another barrier would be the confusion resulting from different assurance schemes, as this is perceived as a barrier by 50% of Italian respondents and 39% of respondents across All Countries.

On the other hand, in Italy an assurance scheme would not create difficulties for SMEs and other companies to enter the ESCO market, which is a highly positive thing since they would remain as possible market players.

**Figure 35. In your opinion, what drawbacks or barriers may be created by a quality assurance scheme like this?**

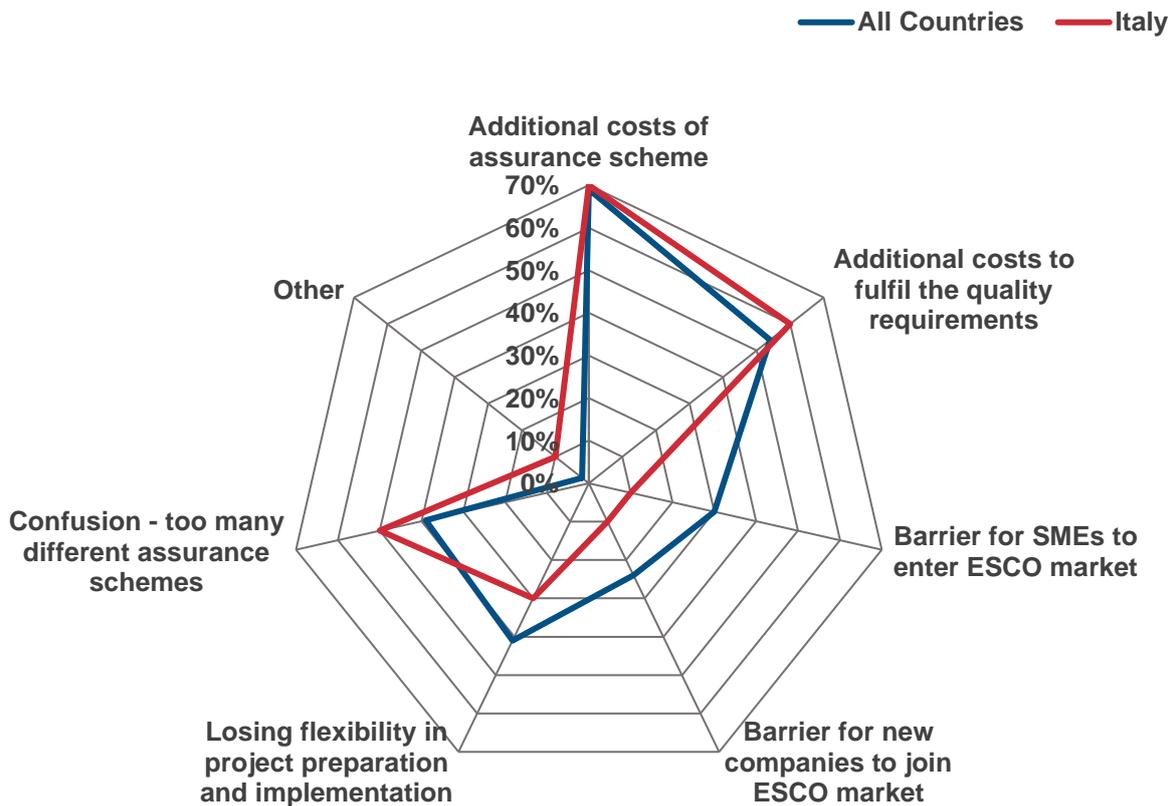
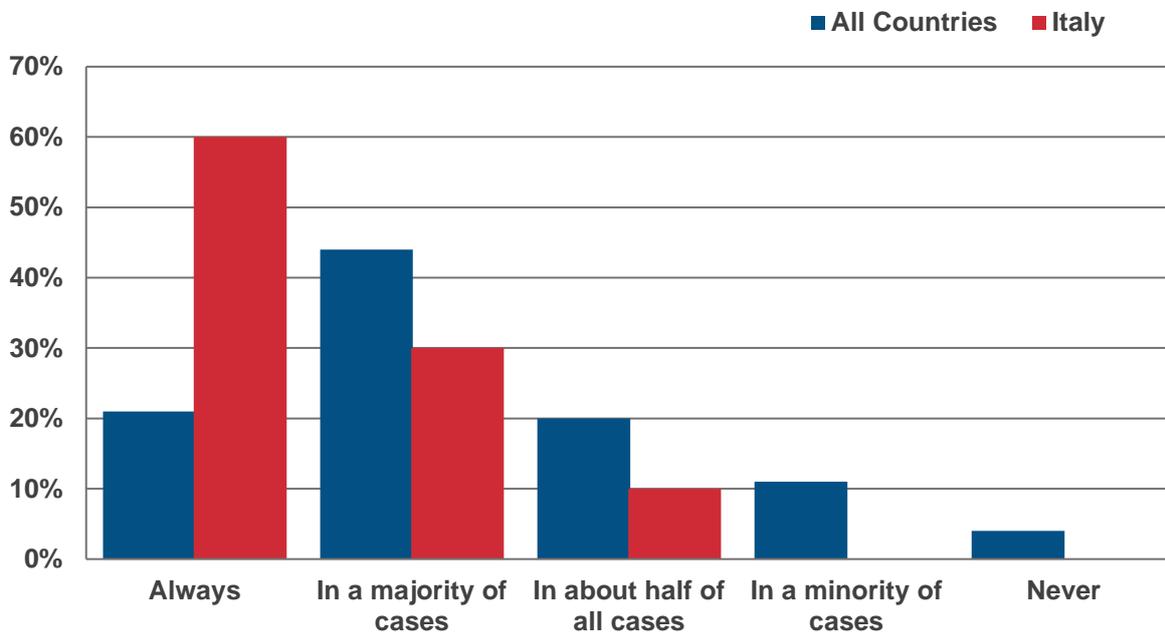


Figure 36 reflects the fact that 60% of Italian respondents would always prefer implementing a project that is subject to quality assurance over a project that is not. This value is significant because it is almost 40 points above the one obtained from All Countries respondents. Even in a majority of cases, 30% and 43% for respondents from Italia and across All Countries respectively would prefer a project with a quality assurance.

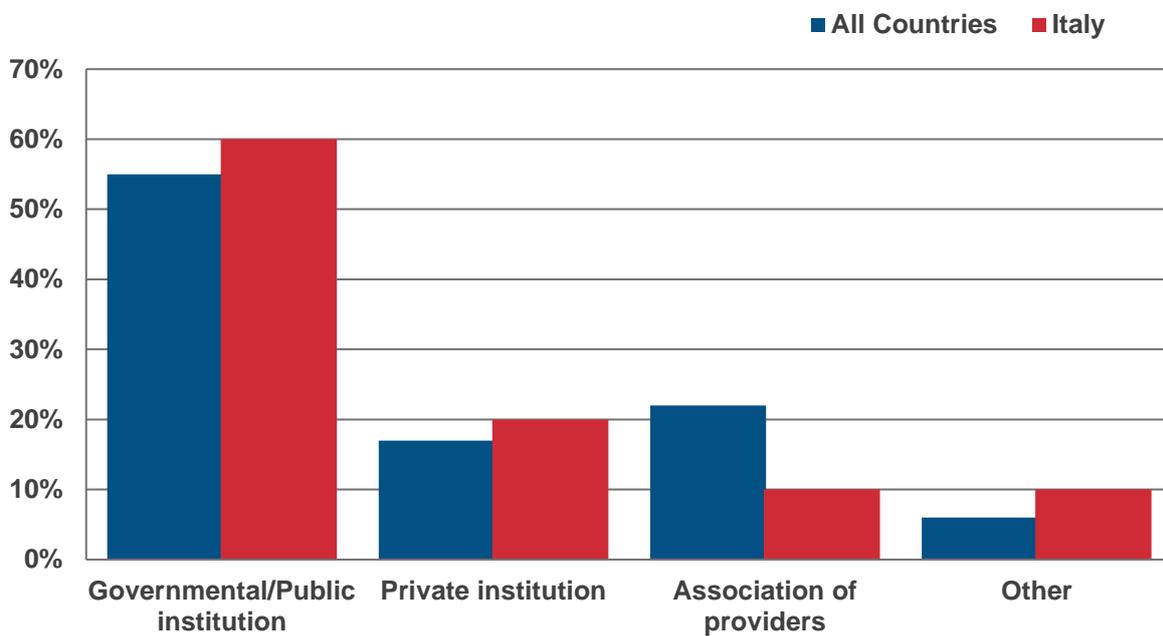
On the other hand, no Italian respondent would prefer implementing a project without quality assurance, while only 4% of respondents across All Countries would be willing to.

**Figure 36. Would you prefer implementing a project which is subject to quality assurance over a project without quality assurance?**



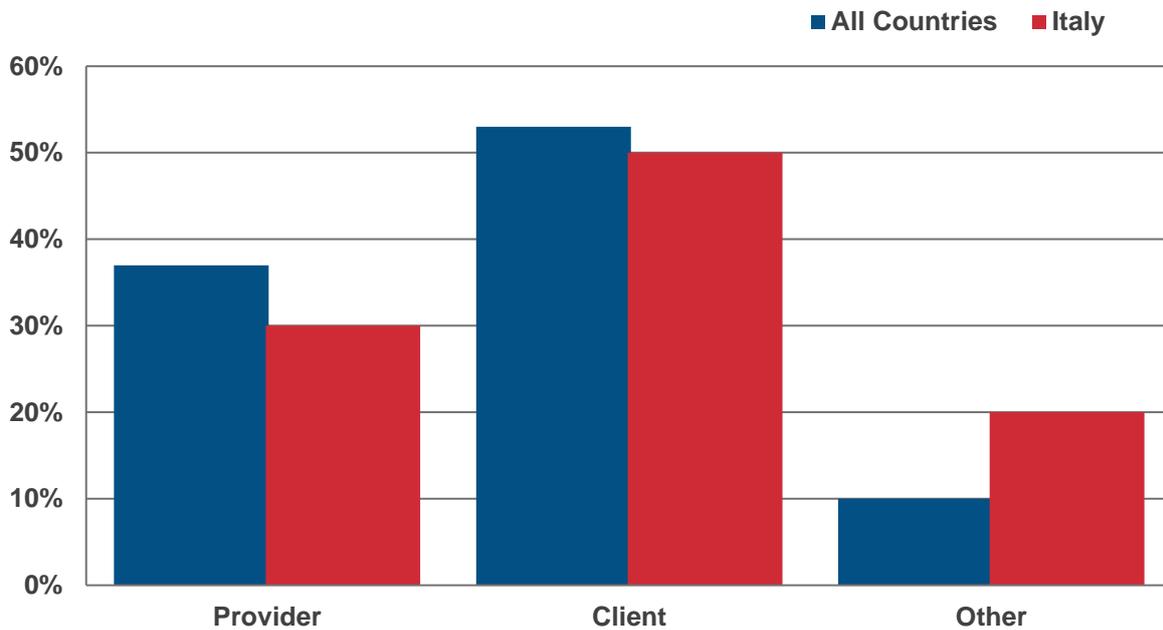
Both respondents in Italy (60%) and across All Countries (55%) clearly identified governmental or public institutions as being the most respected bodies to issue quality assurance certification for energy efficiency services. In Italy, the second most respected bodies would be private institutions (20%), while across All Countries it would be associations of providers (19%). 10% of Italian respondents would prefer “other” bodies including mixed agencies or commissions with public-private collaborations to issue the assurance.

Figure 37. Which would be the most respected body to issue a quality assurance label or certification for EPC/ESC services in your country?



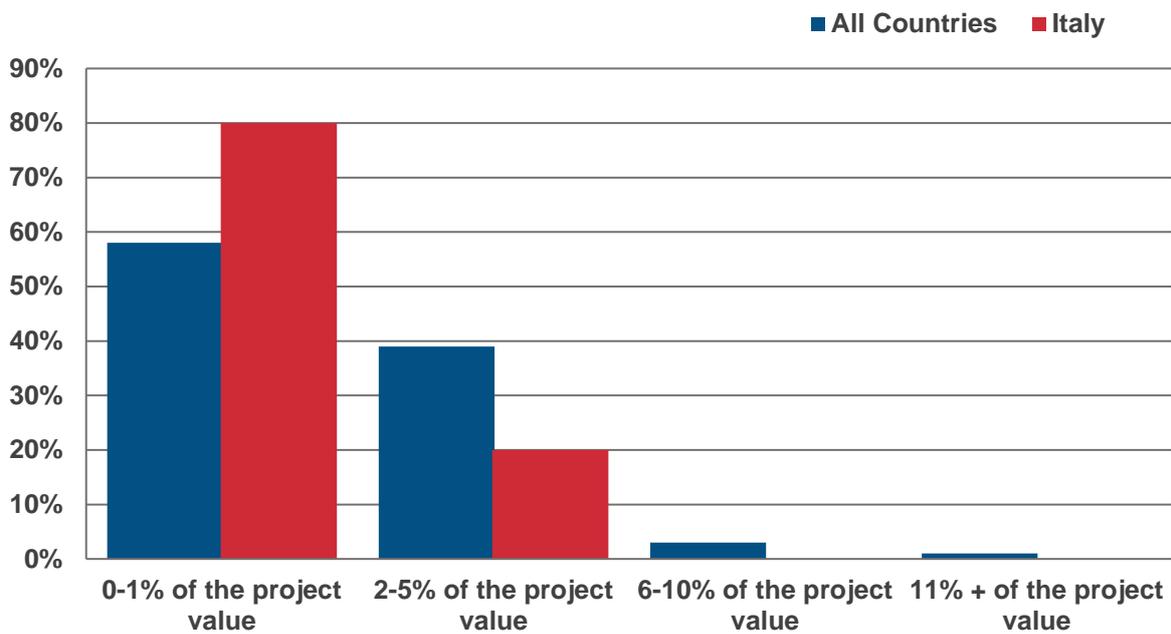
When questioned in the survey about who should be responsible for the payment of the quality assurance of EPC/ESC projects, 50% of respondents from Italy agreed with 53% of respondents across All Countries that it should be the client. However, Figure 38 reflects that 30% of Italian respondents (in comparison with 36% from All Countries) considered that the payment must be carried out by the provider. This result shows a no very significant division for the origin of the payment of the quality assurance.

Figure 38. Who should pay for the quality assurance of EPC/ESC projects?



A viable fee level for external quality assurance per EPC/ESC project would be between 0% and 5% of the value of the project, according to 100% of the Italian respondents. Respondents across All Countries (3%) stated that the fee should be between 6% and 10% of the value of the project, while the majority (96%) were in line with results collected among Italian respondents.

Figure 39. What would be a viable fee level for external quality assurance per EPC/ESC project?



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