

Status of Energy Performance Contracting

ITALY



In 2018, the energy services company (ESCO) market in Italy was worth about €3.7 billion overall. Thirty-five percent of this came from energy performance contract (EPC) services, 42% from energy efficiency and consulting projects, and 23% from sales of energy efficiency certificates (so-called 'white certificates'). This would mean the total turnover connected to EPCs amounted to about €1.3 billion.

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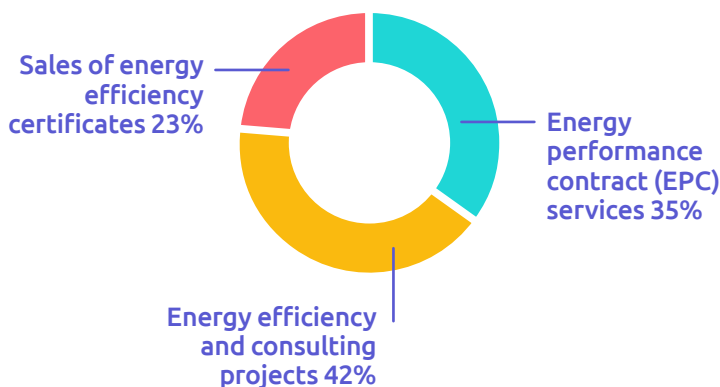
POLICIES, DIRECTIVES AND REGULATIONS RELATED TO ACTIVE BUILDINGS AND DEMAND RESPONSE:

The use of EPCs is regulated by the national [Legislative Decree 102/14](#), which promotes the role of ESCO, as well as the use of third-party financing, and sets out the minimum information that an EPC must contain. The Decree implements the EU Energy Efficiency Directive and includes some important innovations and obligations related to energy efficiency. It also transposes the energy audit obligation and highlights the role of white certificates, which have been in place in Italy since 2004.

Italy's first definition of ESCOs was given by the [Legislative Decree 115/2008](#), a transposition of the [2006/32/EC directive on energy services](#): this is still the relevant legislation. The Decree (115/2008) also defines the requirements that an "energy service contract" and "energy service contract plus" must meet. However, the energy service contract (a contract for the supply, efficient management, maintenance and eventual upgrade of a heating system) was originally introduced by [Presidential Decree 412](#) in 1993, long before ESCOs were defined.

The national technical standard for ESCOs, the UNI CEI 11352, was introduced in 2010; and a second more certification-oriented edition was published in 2014. The standard refers to the EN 15900 European standard on energy efficiency services. Among other technical, financial and managerial requirements, an ESCO must demonstrate that it manages or has managed at least one EPC in order to be certified. Article 12 of the national [Legislative Decree 102/14](#) stipulates that as of July 2016, ESCOs wishing to undertake energy audits or begin new white certificate projects must be certified.

ENERGY SERVICES COMPANY (ESCO) MARKET IN ITALY:



White certificates, or energy efficiency certificates (TEE), certify energy savings achieved by carrying out specific interventions (for example energy efficiency). Implying the recognition of an economic contribution, they represent an incentive to reduce energy consumption.



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This standard defines the minimum requirements for ESCOs: it acts as a quality warranty for the customer, but also for the ESCOs themselves – national and European institutions tend to promote energy efficiency of certified quality. The UNI CEI 11352 ensures that the ESCO, through its services, guarantees an improvement in customers’ energy efficiency by measuring the reduction of energy consumption compared to the initial (baseline) rate. This means the ESCO must carry out a preliminary energy audit, then define what actions need to be taken to improve the energy efficiency, and ultimately verify the results.

Recently, the Italian electricity market has seen a rapid growth in renewable generation. Italy relies mostly on hydro and gas for its flexibility needs, and the legal framework for consumer participation in the balancing market is not yet in place (except in some pilot projects). The only exception is the interruptible contracts programme, which is a dedicated Demand Response programme separated from the balancing market. However, the programme has been called upon only a very few times in the years since its inception, and in some years not at all.

In the wholesale market, flexible consumers can make demand bids by indicating the bid and related price.

The capacity market was only recently launched in 2019, based on the Ministry Decree of 28 June 2019, and it anticipates the participation of demand. It uses procedures that maximise its benefits for the national electricity system, covering the necessary environmental and flexibility requirements and ensuring the participation of all useful resources – including unauthorised new capacity, demand, generation from renewable sources and capacity located abroad. The market is managed through an auction system by the Italian transmission system operator Terna. The plants wishing to take part in the market have to comply with certain requirements, including an emission index (defined as the ratio between the amount of CO₂ produced and the useful energy generated) or total unit emissions (the ratio between the total annual CO₂ emissions of the unit and the maximum withdrawable power).

The regulatory framework for the participation of demand in the balancing market has been subject to substantial changes since 2017. Electricity demand reduction, and the growing share of load covered by non-programmable renewable energy sources such as wind and solar, pose key difficulties for Terna in ensuring the security of the electricity system. This is why there is a need for flexible services in the ancillary service market (MSD – Mercato per il Servizio di Dispacciamento), where Terna procures the resources to manage, operate, monitor and control the power system.



EPC/ESCO ASSESSMENT LEVELS

ESCO market development started with the Ministerial Decree of 20 July 2004, where a first definition of “ESCO” was introduced. Since then the market has grown steadily, strengthened by the energy efficiency certificate mechanism which provides an important source of income for these companies. There are many associations and industry groups that serve the ESCO market in various ways. These include independent associations, such as AssoEsco and FederEsco, and representatives of utility suppliers and technology providers.

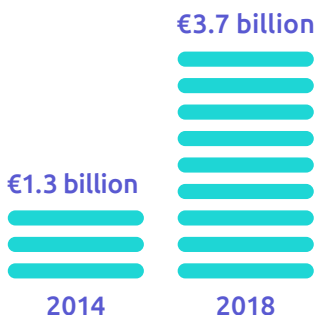
In 2016 turnover doubled, and this has been followed by a constant growth of around 10% per year. In 2018, ESCO turnover from EPCs amounted to 35% of total revenues. EPCs are implemented in all buildings, even though – as is discussed below – their penetration is still low in some market areas.



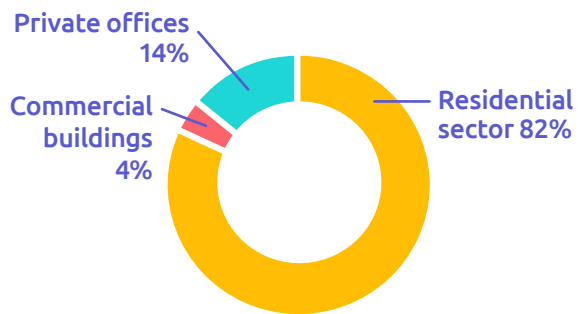
In the industrial sector, the big companies have been responsible for 72% of total investments in energy efficiency for industrial processes, while the remaining investment has come from SMEs focusing on both industrial processes and buildings. In both cases a minor share of the investment (about 12% on average) has come through ESCOs using EPCs.

In Italy, there are about
1,045
BUSINESSES
REGISTERED AS
ESCOs

TOTAL TURNOVER



ENERGY EFFICIENCY INVESTMENTS



In 2018, the home and buildings sector (including offices, commercial and residential buildings) saw energy efficiency investments of €4.6 billion: most of these involved the residential sector (82%), while the remainder was divided between private offices (14%) and commercial buildings (4%).

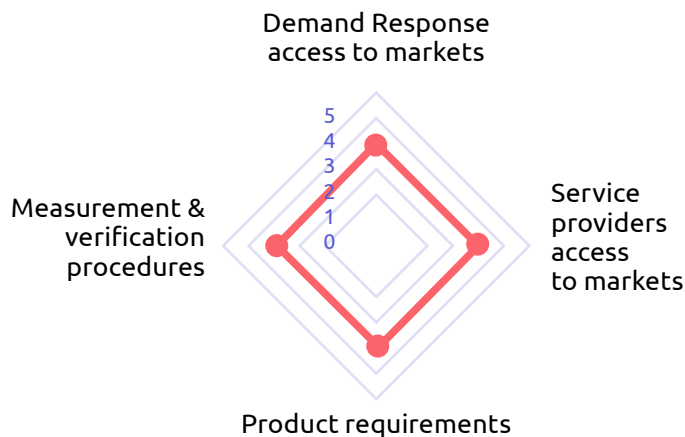
EPCs are mostly used in the commercial and offices sector – their penetration level is still low in the residential sector.

As for public administration, EPCs were behind about 35% of the sector’s energy efficiency investments.



The regulatory framework for the participation of the demand in the balancing market has been subject to substantial changes since 2017. In fact, the Italian Regulatory Authority for Electricity, Gas and Water (ARERA) undertook a complete review process of the ancillary service market, with a view to opening it up to new providers. It did this by introducing the function of ‘aggregator’, aiming to increase the supply of essential network services while also integrating these new providers more closely into the national electricity system.

Pending the definition of the new integrated text of the electrical dispatching regulations (TIDE) in line with the European Balancing Code, the Resolution 300/2017 proposes the launch of pilot projects to test a first opening of the MSD1 as well as addressing flexible electricity demand. Moreover, through this Resolution, for the first time in Italy, the figure of aggregator has been introduced. This corresponds to the balancing service provider (BSP), i.e., the party managing the virtually aggregated units (UVA) and responsible for provision of services traded on the MSD, which is not necessarily the same as the balancing responsible party (BRP). Indeed, the BSP does not have a contractual relationship with the BRP, by directly providing services to the grid operator, whereas the BRP is responsible for payment of the unbalancing fees.



As for the product requirements, Italy – like Belgium – is experimenting with new forms of participation in the MSD according to the criteria of “technological neutrality”, in order to guarantee the supply of network services and improve integration of new providers in the system. Therefore, after the completion of TERNA’s pilot projects (UVAC, UVAP, UVAM), it will be necessary to complete the opening, when fully operational, of the MSD to all resources including flexible demand. The assigned scores are thus expected to increase in the near future.

An aggregator is an electricity market operator that aggregates several production and consumption units distributed in a single virtual unit. The aggregator can then use its portfolio by optimally coordinating the individual units and offering the same services as traditional power plants. This allows access not only to the spot markets, but also to the dispatching services market. In this way, these services can be offered to TSO, supporting the functioning of the network and the higher integration of RES.

- UVAC**
Virtually Aggregated Consumption Units
- UVAP**
Virtually Aggregated Production Units
- UVAM**
Virtually Aggregated Mixed Units

¹ Italian Ancillary Service Market – Mercato dei Servizi di Dispacciamento



ENABLERS AND BARRIERS FOR ACTIVE EPC IN THE EU

Italy is well placed for the introduction of enhanced EPCs, both in all the key areas investigated for the EPC/ESCO market and in the potential for Demand Response services offered by clusters of buildings.

The main EPC/ESCO enablers are summarised below:

- » The **very high competence of the ESCOs**: thanks to the introduction of the UNI 11352 certification and to the presence in the company structure of an expert in energy management, the ESCO is perceived by customers as having high technical and design skills
- » **Responsibility borne by the ESCO**: through an EPC contract, all the bureaucratic, administrative and management duties connected to the energy efficiency interventions are borne by the ESCO, and this is appreciated by the customers
- » **Normative obligations**: the preparation of audits and energy audits – which are mandatory for energy-intensive companies – has led to efficiency actions, in many cases carried out by the ESCOs
- » **Incentives management**: the ESCO normally manages incentives/deductions granted by law on behalf of the customer, who receives indirect economic benefits. The possibility of also transferring tax credits to ESCO clients may prove to be a driving force for investments in the residential sector

The main enablers for Demand Response services offered by clusters of buildings are:

- » The ongoing revision of the regulatory framework according to the **concept of 'technology-neutrality'**
- » The ongoing revision of the regulatory framework in order to **allow independent aggregators**
- » The ongoing revision of minimum performance requirements for each ancillary service set in such a way as to **maximise the number of units eligible to provide the service**, and thus to promote competition in its supply
- » **Consumers' data availability in real time** made possible through the plan established for the roll-out of 2G smart meters, which represent an essential element in the full opening of the markets to new resources (valid for Italy). In this context, Italy is among the most advanced countries in Europe. The availability of consumer data in real time represents an enabling technological element for the evolution of the electricity market by considering demand-side response.

There are however still some barriers for Italy to overcome, such as:

- » The **contractual complexity of EPCs** lack technical skills
- » **Lasting commitment with the ESCO** » **Uncertainty about the type of EPC** to be used in public administration
- » **Complex calculation method for savings**: EPCs provide formulas and methods for calculating savings that are difficult to understand for decision-makers who
 - » **Absence of historical monitoring data**
 - » Uncertainty in the **evaluation of results**

Read the full report for more detailed analysis and results:
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Contributing national partner: ENEA