



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

**AUSTRIA**





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

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### **Authors**

DI Gerhard Bayer

[gerhard.bayer@oegut.at](mailto:gerhard.bayer@oegut.at)

Monika Auer

[monika.auer@oegut.at](mailto:monika.auer@oegut.at)

Österreichische Gesellschaft für Umwelt und Technik (ÖGUT)

Austria

[www.oegut.at](http://www.oegut.at)

### **Reviewer**

Stefan Amann

[stefan.amann@e-sieben.at](mailto:stefan.amann@e-sieben.at)

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# Report on Identified Barriers and Success Factors for EPC Implementation in AUSTRIA



## 1 Summary

The present report aims at providing an overview of the existing EPC market in AUSTRIA. The report focuses on identified barriers and success factors for the implementation of EPC projects.

The report builds on the data and information gathered by two other similar projects, the European Energy Service Initiative<sup>1</sup> (EESI) and the ChangeBest project<sup>2</sup>. It is also intended to be the continuation of the work of the European Commission's Joint Research Centre – the Institute for Energy, and more particularly its Status Report on the market of Energy Service Companies in Europe<sup>3</sup> published in 2010.

### World ESCO Report

The Austrian ESCO market, in particular the EPC market, is considered a highly developed market, close to German standards. However, the big boom for EPC announced in the 1990's did not come up until now. Most of the respondents (ESCOs and banks) to the online survey about barriers and success factors and the discussions of the authors with ESCOs during the last years show a tendency towards the stagnation of the market. It is expected that the largest EPC market will be the public sector.

In the National Energy Efficiency Action Plan (i) an increase of the refurbishment rate of up to 3 percent and (ii) the implementation/promotion of energy services (especially contracting) in the household sector are listed for the next action period (2012-2014). Further, the tenancy law, the condominium law and the law for public utility housing will be described.

The report concludes with barriers (e.g. smaller municipalities are not familiar with the legal requirements; split incentive phenomenon; lack of trust in the ESCO industry; missing financial liquidity; etc.) and success factors (e.g. "Federal Contracting Campaign"; bundling of buildings suitable for EPC; funding model in Upper Austria, etc.).

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

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

<sup>3</sup> <http://publications.jrc.ec.europa.eu/repository/bitstream/111111111/15108/1/jrc59863%20real%20final%20esco%20report%202010.pdf>

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## 2 Introduction

### 2.1 Methodology

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

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

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

The survey was sent to 18 people from financing institutes and to all members (19 ESCOs) of the Austrian umbrella organisation for ESCOs (DECA). Responds has been given from 6 ESCOs and 3 financing institutes.

Additional information was gathered by the authors (i.e. by three workshops with ESCOs where various EPC market issues in Austria were discussed) in order to present a thorough and up-to-date picture of the state of the EPC market in AUSTRIA.

### 2.2 What is Energy Performance Contracting

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

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

- **Turnkey Service** – The ESCO provides all of the services required to design and implement a comprehensive project at the customer facility, from the initial energy audit through long-term Measurement and Verification (M&V) of project savings.

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- **Comprehensive Measures** – The ESCO tailors a comprehensive set of measures to fit the needs of a particular facility, include energy efficiency and in addition, can include renewables, distributed generation and water conservation.
- **Project financing** – The ESCO arranges for long-term project financing that is provided by a third-party financing company, typically in the form of a bank loan.
- **Project Savings Guarantee** – The ESCO provides a guarantee that the savings produced by the project will be sufficient to cover the cost of project financing for the life of the project.

Energy Performance Contracting allows facility owners and managers to upgrade ageing and inefficient assets while recovering capital required for the upgrade directly from the energy savings guaranteed by the ESCO. The ESCO takes the technical risk and guarantees the savings.

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

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

### 2.3 Definition of EPC and EPC provider

While there is a vast number of definitions of EPC within Europe, within Transparense project we use the EU wide definition provided by the Energy Efficiency Directive<sup>4</sup> (EED):

“‘**energy performance contracting**’ means a contractual arrangement between the beneficiary and the provider of an energy efficiency improvement measure, verified and monitored during the whole term of the contract, where investments (work, supply or service) in that measure are paid for in relation to a contractually agreed level of energy efficiency improvement or other agreed energy performance criterion, such as financial savings;”.

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<sup>4</sup> Directive 2012/27/EU of the European Parliament and of the Council on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC was approved on 25 October 2012.

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At the same time, within Transparensense project, the focus will be given to the EPC projects, where the above mentioned "contractually agreed level of energy efficiency improvement" is **guaranteed** by the EPC provider<sup>5</sup>. This is in line with the EED, as in its Annex XIII, guaranteed savings<sup>6</sup> are listed among the minimum items to be included in energy performance contracts with the public sector or in the associated tender specifications. Moreover, in the article 18 of EED, Member States are required to promote the energy services market and access for SMEs to this market by, inter alia, disseminating clear and easily accessible information on available energy service contracts and clauses that should be included in such contracts to **guarantee energy savings** and final customers' rights.

Further, within the Transparensense, we define the companies providing EPC as follows:

**"EPC provider"** means a natural or legal person who delivers energy services in the form of Energy Performance Contracting (EPC) in a final customer's facility or premises"

Such definition respects the fact that EPC is only one type of energy services, and is in line with the definition of the energy services provider specified in the EED (for its definition see the glossary at the end of the report). Within the Transparensense texts, we use the commonly used term "ESCO" as equivalent of the energy service provider.

### 3 The EPC Market in AUSTRIA: an Introduction

The Austrian ESCO market, in particular the EPC market is considered a highly developed market, close to German standards. . It emerged in the mid-1990s, exhibiting a decent market development since its start and also during recent years. The first big step was made in 1998, when two building pools with around 50 federal buildings (Viennese schools) were renovated by ESCOs within the Performance Contracting Project. This was followed by regional projects, particularly in Styria, Salzburg and Tyrol. In 2001, the Council of Ministers decided to launch a gigantic renovation project called "Contracting Offensive", where approximately 500 buildings were refurbished using Performance Contracting(AEA 2007).

The big boom for EPC announced in the 1990's did not come up until now. Most of the respondents to the survey about barriers and success factors and the discussions of authors

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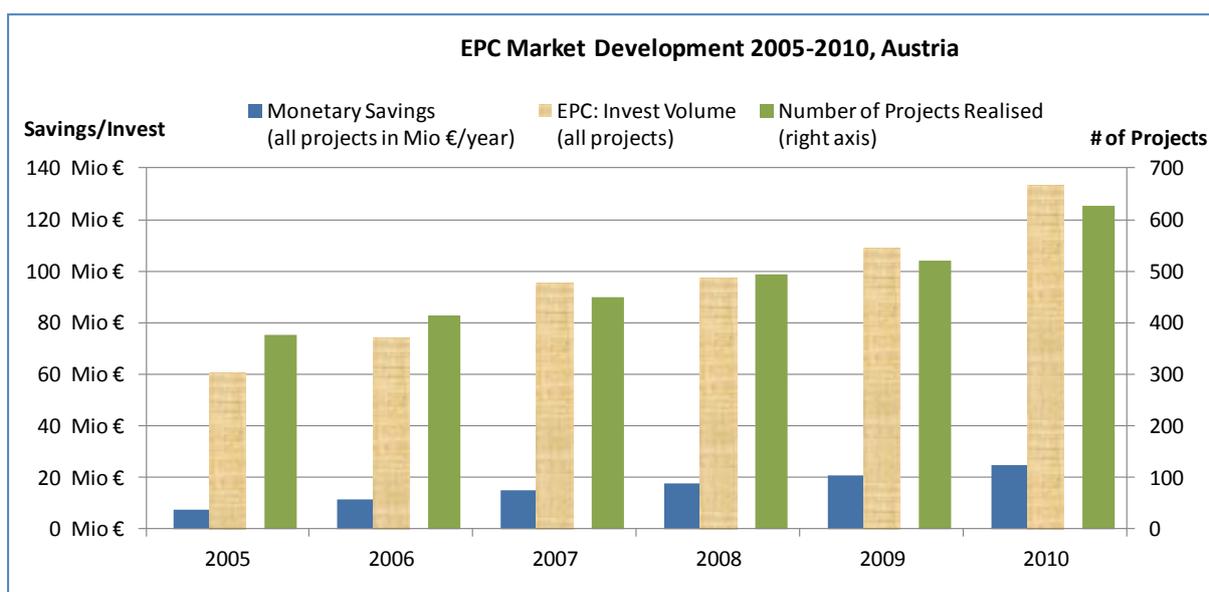
<sup>5</sup> According to the EN 15900:2010 energy efficiency improvements are guaranteed if a "commitment of the service provider to achieve a quantified energy efficiency improvement" is made.

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

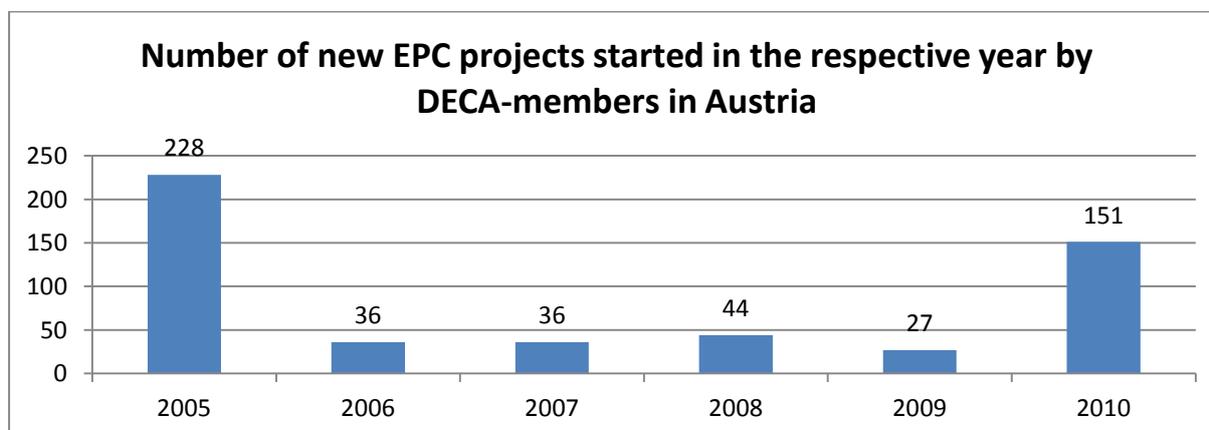
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with ESCOs during the last years come to the conclusion that the market tends to stagnate.. Other stakeholders tend to see a more optimistic future for EPC especially due to the development of energy prices and European legislative initiatives (Energy Efficiency Directive).



Graph 1: Development of the Energy Performance Contracting market within the period 2005 to 2010, only projects of the members of DECA. The figures for investment volume and the number of projects are accumulated. Source: DECA Dienstleister Energieeffizienz und Contracting Austria, 2012.



Graph 2: Number of new EPC projects initiated in the respective year by DECA-members in Austria (2005: includes all projects commenced in the previous years before the foundation of DECA, 2010:

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growth caused by additional members of DECA) Source: DECA Dienstleister Energieeffizienz und Contracting Austria, 2012

The public sector is expected to be the largest EPC market. The largest client groups in the public sector are the BIG – BundesImmobilienGesellschaft (“Federal real estate association”) and the 2,354 municipalities, which are among the largest owners of public buildings in Austria.

At the Austrian “Contracting – Portal” (<http://www.contracting-portal.at>) 25 companies are registered to offer Energy Contracting. 11 companies offer Energy Performance Contracting and 21 companies provide Energy Supply Contracting.

### 4 Legislative Framework

The “Energy Strategy Austria” calls for an increase of energy efficiency by 20 percent until 2020 in comparison with the baseline scenario the application of a mandatory linear reduction beginning with the year 2013 leads to a reduction of 210 PJ of the overall energy consumption by 2020. (Österreichische Energiestrategie, 2012)

In the National Energy Efficiency Action Plan (NEEAP), the following tasks are listed for the next period of action (2012-2014):

- ✓ increase of the refurbishment rate in the building sector to 3 percent;
- ✓ implementation/promotion of energy services (especially contracting) in the household sector.

**The legal framework includes a “Climate Protection Regulation”** and an agreement (§15a) between the federal government and the federal provinces. It encompasses measures for the further development of the legal framework for the housing sector, the augmentation of the thermal refurbishment rate and the more frequent utilization of renewable energy technologies.

For energy saving measures in residential buildings following laws are important frameworks:

Mietrechtsgesetz (tenancy law): This law regulates the juridical situation at residential buildings for tenants. Only costs for the preservation of the building condition may be assigned to the tenants. Costs for energy saving measures, which improve the condition of

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the building, may not be assigned. As the definition of “preservation of the building condition” is a dynamic one and follows the state of the art, it is not clearly defined which energy efficiency measures belong to which category. If energy saving measures can be defined as a “preservation of the building condition”, the building owner may transfer the investment costs to the tenants according to §18 .

Wohnungseigentumsgesetz (Condominium law): Most energy saving measures of condominium buildings must be approved by the majority of the apartment owners. If an owner does not respond to the request (e. g. owner lives abroad), his or her vote disapproves.

There are no standard rates existing for accumulated reserve funds. Often the existing reserve funds are very low and not sufficient for larger energy saving measures.

Wohnungsgemeinnützigkeitsgesetz (law for public utility housing): The law defines minimum standard rates for accumulated reserve funds (in 2013 about 1.2 Euro/m<sup>2</sup>.a). This results in many cases where sufficient financial reserves exist to implement comprehensive energy saving measures.

After the implementation of an energy saving measure according to §14, Abs. 5, Z5a WGG, the saved heating costs can be used to pay back the investments and restock the reserve fund. This procedure may be applied for measures with a payback period of up to 15 years; a prolongation of the accepted period can be stated if all tenants agree to this (VOGEWOSI 2008).

## 5 Identified Barriers

### 5.1 Regulatory and Administrative Barriers

#### 5.1.1 General Regulatory Barriers

Smaller municipalities are not familiar with the legal requirements for public tendering of contracting projects according to public procurement law, since the appropriate award procedure for EPC consists in tendering the contracting project with functional descriptions of the specification.

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### 5.1.2 Regulatory and Administrative Barriers

Split incentive phenomenon: In residential buildings the interests of landlords and tenants collide. While tenants profit from energy saving measures due to lower energy bills, the landlord pays the investment costs and does not directly profit from these measures. A transfer of the costs toward the tenants is difficult and regulated in the tenancy law.

In condominium buildings, where several apartments are owned individually, it is very difficult to achieve an approval of all or the majority of the owners, as requested in the condominium law. This is contributed to the fact that there are often some owners who do not live in the apartment themselves but rent them to another person. In this case the same impediment caused by the conflict of interests between landlord and tenant remains.

An other obstacle is the dependence of many EPC projects on public subsidies or on the political will of the federal or local government. Therefore it is difficult for ESCOs to plan a long term market strategy and their personal resources on this market segment.

The Austrian tax law has different regulations for service contracts and construction contracts regarding the payment date of the value added tax. This uncertainty means a relevant risk for all EPC project partners.

### 5.2 Structural Barriers

In some sectors there is a lack of trust in the ESCO industry. They base on individual negative experiences in previous EPC projects and give way to prejudices like “The ESCO saves energy costs by reducing the user comfort”. These prejudices must be eradicated.

An EPC project often results in a transfer of responsibilities and work load from the client toward the ESCO (adjustment of temperatures, operation modes ...). Especially in public entities scepticism of the (technical) staff is often found because private companies are taking over duties which were managed by the clients’ organisation before. The argument “Why should the ESCO be able to manage it better than the in-house department?” is sometimes used in these cases.

In general, it is vital to be aware of the fact that EPC projects do not only consist of technical and financial aspects, but very often imply more changes for the employee and the building user.

Public owners often have split budgets and separate responsible departments for energy costs and investments (i.e. in schools, kindergartens). The savings caused by energy

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measures cannot automatically be used for refinancing investments for more energy saving measures.

There is a lack of (affordable or/and qualified) market facilitators providing technical and legal support for clients during tendering procedures.

### 5.3 Financial Barriers

An important barrier is posed by the increasing difficulties of raising financial liquidity which is affordable. In recent years, financing institutes became more restrictive in granting credits. For small and medium sized ESCOs this constitutes a barrier which makes it more difficult to enter the market.

Considering a comprehensive energetic retrofitting (including thermal insulation of the building shell), the refinancing of the investments with energy cost savings is rarely possible. In most cases the joint implementation of commercially viable measures, e.g. HVACR (Heating, Ventilation, Air Condition and Refrigeration) and measures with long payback periods (building insulation) is the best option from the environmental as from the macroeconomic point of view. The division of these two groups of measures into two separate projects causes following problems:

- The separation of the investment costs at a joint construction site is difficult.
- To allocate the actual saved energy (in kWh) partly to the “measure group HVACR” and partly to the measure group “building shell” is difficult. If guaranteed savings will not be achieved, it is difficult to proof which group of measures is responsible for it.

If energy saving measures concerning HVACR are implemented in a building without optimising the building shell first, the building insulation measures, which take place afterwards, will encounter worse economic terms, since the baseline is already lower.

Therefore subsidies suitable for EPC projects who implement comprehensive energetic retrofitting of buildings are an important measure for increasing the energy saving potentials in Europe. Such financial support measures are implemented scarcely in Austria.

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## 6 Success Factors

### 6.1 Successful Regulatory Models

#### Implementation of pilot projects and EPC-programmes by public entities

In March 2001, the Austrian Energy Agency (E.V.A.) initiatives led to a ministerial order, laying the foundation for a “Federal Contracting Campaign (Bundescontracting Offensive)” encompassing around 300 federal buildings. The program is managed by the federal building agency “BIG” in cooperation with the Ministry of Economics.. The programm’s operation is supported by 22 so-called “Energiesonderbeauftragten.” (special representatives for energy issues). The program has gone through ups and downs, but is still Austria’s largest EPC program. Up to now, approximately 600 buildings, bundled in 19 pools of buildings, have been outsourced to ESCOs and further tenders are in preparation. The average share of energy cost savings made in buildings owned by BIG is 20.3 %, which represents 4.23 Mio EUR. (Source: Ministry of Economy, Family and Youth, 2013)

Since then, the Austrian Energy Agency has almost entirely left the ESCO market facilitator arena, while some regional energy agencies are still very active.

Also Vienna’s city-department MA 34 (Magistratsabteilung Bau-und Gebäudemanagement) has established “EPC as a financing model for energy savings in buildings” after successfully testing eight pilot projects during the end of the 1990s. Its homepage lists 40 currently running EPC projects and 25 already terminated projects. In the last few years, the swimming pool department “Wiener Bäder (MA 44)” has outsourced comprehensive energy and water-saving projects to private ESCOs.

In the state of Upper Austria, the regional energy agency “Oberösterreichischer EnergieSpar-Verband” (ESV) was an early mover and set up an “Energy-Contracting Program (ECP)”, both for EPC and ESC projects. Until now, 56 projects have been supported by the majority of public building owners.

Wohnungsgemeinnützigkeitsgesetz (law for public utility housing): The law defines minimum a standard rate for accumulated reserve funds (in 2013 about 1.2 Euro/m<sup>2</sup>.a). This results in sufficient financial reserves for implementing comprehensive energy saving measures in many cases. This increases the chance for EPC projects, which are combined with long term measures of the building shell.

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### 6.2 Successful Structural Models

#### Specific EPC models

EPC models vary greatly their form depends on the size and duration of the project, the task and risk of sharing as well as on the complexity of the technical measures and influence of the user. Below two EPC models are mentioned which follow a comprehensive approach regarding the increase of saving potentials.

In the state of Styria the “Graz Energy Agency” initiated a comprehensive EPC program under the brand name “Thermoprofit<sup>®</sup>” (<http://www.grazer-ea.at/cms/arbeitsfelder/contracting-thermoprofit/content.html>), which introduced among other things quality standards for ESCO projects, the foundation of a network for qualified ESCOs, their certification as well as project development and facilitation for potential ESCO customers (Source: Auer, Monika; Bleyl, Jan W.,2012))

In the last few years, the stately owned real estate company of Styria “Landesimmobiliengesellschaft” has applied the newly developed Integrated Energy-Contracting (IEC) model to eight of its real estates. The IEC model, which was developed as part of IEA DSM (International Energy Agency, Demand Side Management) Task XVI<sup>7</sup>, combines supply (preferably from renewable energy carriers) with energy conservation measures in the entire facility while simplifying Measurement & Verification (M&V) procedures (through quality assurance instruments). Further projects are in preparation. (GEA 2011)

#### Bundling of projects - economies of scale

Many building owners bundle several buildings when tendering an EPC project. In smaller municipalities they often bundle all public buildings suitable for EPC at once, often resulting in groups of 5-20 buildings. This leads to lower specific project preparation costs (analyses of the current building state, meetings with project partners, etc.) as well as to lower specific maintenance costs for the ESCO. It is also convenient for the building owner to have only one cooperation - partner during the next 5-10 years.

The bundling of a very large number of buildings during one tender phase also reduces the number of potential ESCOs, as the total project size might become too large for small, local sited ESCOs.

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<sup>7</sup> [www.IEADSM.org](http://www.IEADSM.org) => Task XVI

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### 6.3 Successful Financing Models

The state of Upper Austria (Oberösterreich) has a funding model to support Energy Contracting Projects (EPC and Supply contracting). The fund is managed by the OÖ Energiesparverband (<http://www.esv.or.at>). The link to the application is : [http://www.land-oberoesterreich.gv.at/cps/rde/xbcr/ooe/LWLD\\_Wi\\_E13\\_EnergieContractingProgramm.pdf](http://www.land-oberoesterreich.gv.at/cps/rde/xbcr/ooe/LWLD_Wi_E13_EnergieContractingProgramm.pdf)

Projects between an investment sum of 50,000 to 500,000 Euros are eligible to apply, the maximum share of support for EPCs is 20 % and 13.5 % for Supply contracting projects. In addition, subsidies who pay 50% of the costs (max. 1,000 Euros) for “preanalyses” are also available (<http://www.esv.or.at/foerderungen/contracting>).

If the building owner/user has a relevant influence on the actual energy savings,

a (small) part of the cost savings (up to 20 %) is devoted to the owner/user who figured out how to improve the overall success of the project.

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## Definitions and glossary

Term	Definition
<b>energy efficiency (EE)</b>	means the ratio of output of performance, service, goods or energy, to input of energy (as defined by EED)
<b>energy efficiency improvement</b>	means increase in energy efficiency as a result of technological, behavioural and/or economic changes (as defined in EN 15900:2010)
<b>energy management system</b>	means a set of interrelated or interacting elements of a plan which sets an energy efficiency objective and a strategy to achieve that objective (as defined by EED)

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<b>energy savings</b>	means an amount of saved energy determined by measuring and/or estimating consumption before and after implementation of an energy efficiency improvement measure, whilst ensuring normalisation for external conditions that affect energy consumption (as defined by EED)
<b>final energy consumption</b>	means all energy supplied to industry, transport, households, services and agriculture. It excludes deliveries to the energy transformation sector and the energy industries themselves (as defined by EED)
<b>guarantee of energy efficiency improvement</b>	means commitment of the service provider to achieve a quantified energy efficiency improvement (as defined in EN 15900:2010)
<b>energy performance contracting (EPC)</b>	means a contractual arrangement between the beneficiary and the provider of an energy efficiency improvement measure, verified and monitored during the whole term of the contract, where investments (work, supply or service) in that measure are paid for in relation to a contractually agreed level of energy efficiency improvement or other agreed energy performance criterion, such as financial savings (as defined by EED)
<b>EPC provider</b>	means a natural or legal person who delivers energy services in the form of Energy Performance Contracting (EPC) in a final customer's facility or premises
<b>energy service provider /energy service company (ESCO)</b>	means a natural or legal person who delivers energy services or other energy efficiency improvement measures in a final customer's facility or premises (as defined by EED)
<b>energy service (ES)</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 (as defined by EED)