



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

Czech Republic



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Abbreviations

APES (Association of Energy Services Providers, Asociace poskytovatelů energetických služeb)

EED (Energy Efficiency Directive)

EPC (Energy Performance Contracting)

ESCO (Energy Services Company)

MoIT (Ministry of Industry and Trade of the Czech Republic)

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1 Summary

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

The report is building on the data and information gathered by two other similar projects, the European Energy Service Initiative¹ (EESI) and the ChangeBest project². It is also intended as a continuation on the work of the European Commission's Joint Research Centre – Institute for Energy, and more particularly on its 2010 Status Report on Energy Service Companies Market in Europe³.

EPC market in the Czech Republic is quite well developed. However, it still lacks broader strategic support from the government and the success of EPC in the Czech Republic can be mainly attributed to continuous bottom up efforts. Large part of EPC potential remains untapped, to great extent due to the legal and administrative barriers. The most significant barriers face so called organisational units of the state, who are currently not allowed to implement Energy Performance Contracting at all.

On the other hand, since 2012, preliminary analysis of the suitability for EPC have been supported through state programme, reducing the initial upfront costs for municipalities. Standard contract for EPC projects was developed and is publicly available. Several successful projects combining technology measures through EPC and subsidized construction measures have been implemented.

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

² http://www.changebest.eu/index.php?option=com_content&view=article&id=43&Itemid=10&lang=en

³ <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.

There are 11 respondents to the survey in the Czech Republic:

- 6 representatives of ESCOs, who are most active members of the ESCO association APES with 90% share on the Czech EPC market
- and 5 representatives of finance houses, which are mostly main sources of the bank credits for the EPC projects in the Czech Republic.

Thus, despite the relatively low number of the respondents, they represent very well the main actors both on the side of ESCOs and the finance houses and thus provide highly reliable overview of the situation on the EPC market.

The report does not rely only on the survey responses, but also on the information gathered by the authors in order to present a thorough and up-to-date picture of the state of the EPC market in the Czech Republic.

2.2 What is Energy Performance Contracting

Energy performance contracting (EPC) is when an energy service company (ESCO) is engaged to improve the energy efficiency of a facility, with the guaranteed energy savings paying for the capital investment required to implement improvements. Under a performance contract for energy saving, the ESCO examines a facility, evaluates the level of energy savings that

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could be achieved, and then offers to implement the project and guarantee those savings over an agreed term.

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

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

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

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2.3 Definition of EPC and EPC provider

While there is a vast number of definitions of EPC within Europe, within Transparensense project we use the EU wide definition provided by the Energy Efficiency Directive⁴ (EED):

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

At the same time, within Transparensense project, the focus will be given to the EPC projects, where the above mentioned “contractually agreed level of energy efficiency improvement” is **guaranteed** by the EPC provider⁵. This is in line with the EED, as in its Annex XIII, guaranteed savings⁶ 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.

⁴ 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.

⁵ Guarantee of energy efficiency improvement is defined by EN 15900:2010 as “commitment of the service provider to achieve a quantified energy efficiency improvement”.

⁶ 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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3 The EPC market in the Czech Republic: an introduction

EPC market in the Czech Republic is considered to be one of the developed ones in the European Union (and worldwide), even though the number of projects implemented so far is relatively small (around 150 over last 20 years). Yet, the EPC market has so far lacked a strategic support from the government and no specific framework for EPC market development in public sector has been introduced (e.g. institutions managed/operated by state, etc.).

Energy services market in the Czech Republic started to develop already some 20 years ago when EPC was introduced to the Czech Republic and first energy services companies (ESCOs) started to emerge⁷. Since, over 150 EPC projects have been implemented with a total investment volume of almost CZK 3 billion (about EUR 120 million). The annual value of EPC projects reached CZK 20 mill. in 2000. Since then, it has grown continuously and the annual volume of investments into EPC projects has been estimated to about CZK 250 million (about EUR 10 million) in the years 2010-2012. Despite the economic recession, the EPC market has grown steadily in the last three years, as confirmed by the ESCOs in the Czech Republic. Energy savings brought by these projects reach ca. 800 TJ of final energy consumption. About 70 % of the projects have been implemented in public sector (SEVEN 2012).

Currently, there are about ten companies offering Energy Performance Contracting, of which five to six have a long experience with EPC and conclude EPC projects on a regular basis⁸. In a tender for EPC the tenderer usually receives 4 – 6 offers.

It is expected that with the growth in demand for EPC, new ESCO companies will emerge, increasing the total number of the providers on the market. This, in turn, calls for standardization of the EPC sector in order to maintain high quality of the EPC projects. To this end, in 2011, Association of Energy Services Companies (Asociace poskytovatelů energetických služeb, APES) was founded, institutionalizing the EPC sector in the Czech Republic and focusing on setting standards of the EPC market.

Typically, the EPC projects aim at decreasing heat consumption. However, recently the projects have also covered electricity saving measures (such as lighting measures, air-conditioning and ventilation, etc.) and water saving measures. Furthermore, guaranteed

⁷ For a comprehensive summary of the EPC market development in the Czech Republic, please see e.g. (Sochor and Szomolányiová 2009) or (Sochor and Valentová 2009).

⁸ Furthermore, there are dozens of energy providers on the Czech market offering energy services as part of their services extended to clients. The services mostly aimed at outsourcing and modernisation of the existing equipment, while savings do not represent the chief subject matter of the contracts. However, in exceptional cases, some of those companies would also offer EPC contracts.

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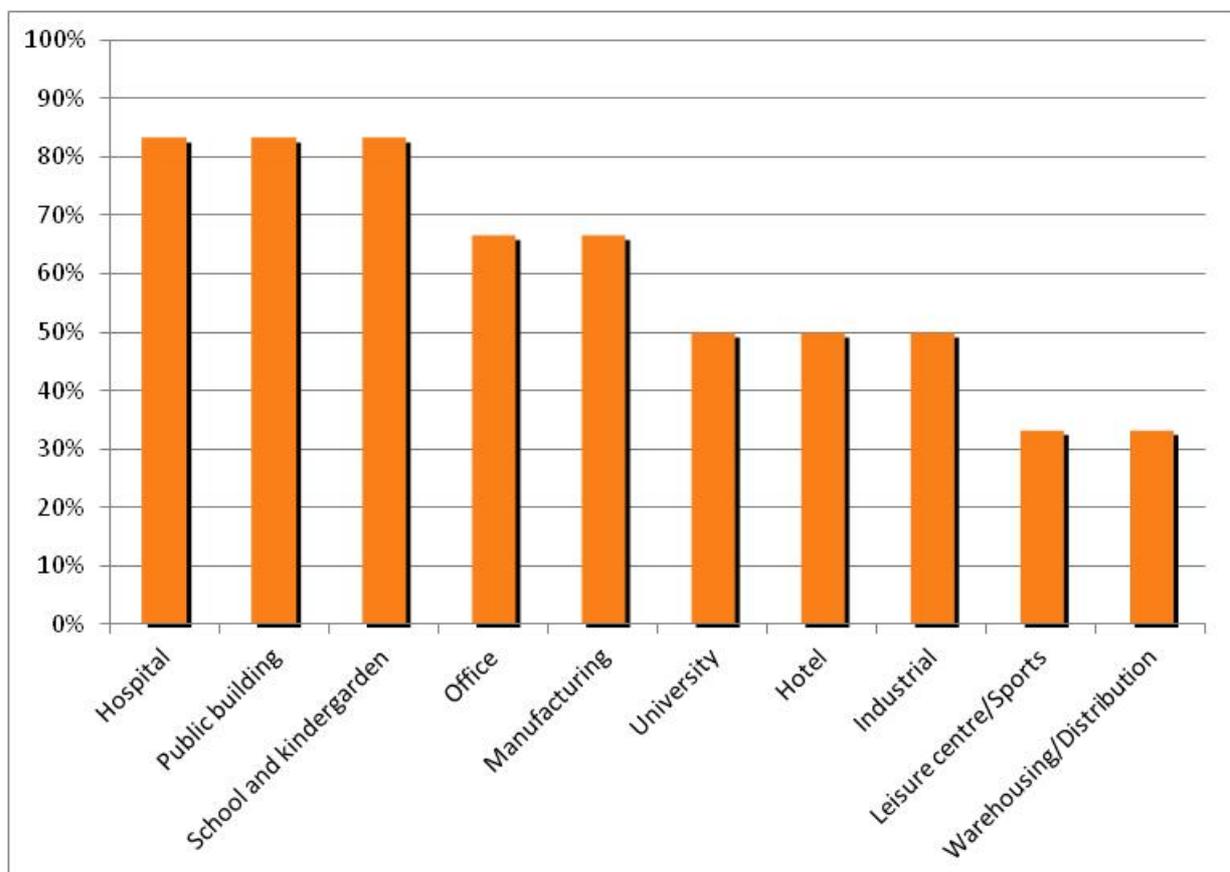


savings tend to entail other operational costs related to energy management. Following the Transparensense survey, ESCOs estimate that the savings guaranteed by the contract average at about 15 - 20 %; typical project size varies greatly, from EUR 500 000 to EUR 5 000 000.

The EPC method is still applied mostly in the communal sector where medium-sized and large municipalities act as organisers of public tenders. Lately, regions have shown some major interest in EPC, and such interest is increasing also among so-called allowance organisations in the State sector. It is reasonable to expect that the market growth in the next years will be mostly implemented again in the communal sector.

The following figure and table show the most typical type of buildings and typical energy efficiency measures implemented by ESCOs in their projects, as found in the Transparensense EPC Survey.

Figure 1 Type of buildings in EPC projects



Source: Transparensense EPC Survey (2013)

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Table 1 Type of measures in EPC projects

Type of measure	% of ESCOs typically installing the measure
Behaviour Change / Organisational Measures	100%
Boiler - High Efficiency Unit	100%
Boiler - Controls	100%
Building Energy Management System (BEMS)	100%
Energy Recovery	100%
Lighting - High Efficiency	100%
Heat Exchangers	83%
Heat Pump - Air Source	83%
Heat Pumps - Water Source	83%
Refrigeration - Controls	83%
Variable frequency drive or variable speed drive	83%
Boiler - Optimisation	67%
Combined Heat and Power (CHP)	67%
Heating Ventilation Air Conditioning (HVAC)	67%
Lighting - Controls	67%
Radiant and Warm Air Heaters	67%
Refrigeration - High Efficiency Unit	67%
Refrigeration - Optimisation	67%
High efficiency Motors	50%
Power Management (Voltage Optimisation, Power Factor Correction)	50%
Heat Pumps - Ground Source	33%
Compressed Air Equipment	17%
Solar - Photovoltaic	17%

Source: Transparense EPC Survey (2013)

Note: ESCOs selected more than one measure in their replies.

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4 Legislative framework

EPC market in the Czech Republic has seen a steady growth of projects. However, the potential for savings remains high⁹. Moreover, the growth and development of EPC market can be attributed almost exclusively to the work of the ESCOs themselves. In other words, practically each of the projects is a result of marketing activities of the ESCO companies or consulting firms, which assist the customers in identifying and drafting of such projects. Experience shows that customers need to be persuaded now and again about the EPC benefits, individually and within the framework of repeated personal contacts. The support from state remains low whereas administrative and legislative barriers high.

So far, EPC (and energy services in general) have been neglected in the energy related strategic and legislative documents of the Czech Republic. The Updated State Energy Policy of the Czech Republic (MoIT 2012) neglects energy services as a whole and so does the Second National Energy Efficiency Action Plan of the Czech Republic (MoIT 2011).

In terms of regulatory framework, one important milestone was the Resolution of the Government of the Czech Republic dated 19 October 2011, which stipulated, among others, drafting of a model EPC contract and a programme for renovation of public buildings.

The resolution further initiated drafting of a methodology for the application of the EPC method in facilities belonging to the State administration authorities and managed by the so-called “organisational units of the state” (OUS), which currently cannot use EPC. Although the draft methodology had been prepared, unfortunately, the process of negotiating and approving has not even started and there is no schedule foreseen yet. (General guidance on EPC method was developed in 2011.)

In 2012 and in 2013, the Ministry of Industry and Trade included among its supported activities under the EFEKT programme the preparatory phase of EPC projects, in the form of executing an introductory analysis on the suitability of the selected facilities for the EPC method. In 2012, 17 projects (initial analyses) have been supported. The EFEKT programme also supports soft measures, such as promotion materials, seminars, conferences and other. In 2012, the programme supported drafting of standard EPC documents (contract and tender documentation).

EPC market in the Czech Republic has been supported by a number of international initiatives, in particular, projects financed by the European Commission (Transparense, EESI2020 following former projects such as ChangeBest, EESI, Eurocontract, Clearcontract,

⁹ See e.g. report by Szomolanyiová and Sochor (2013) conducted within the Combines project.

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EU Benef, CF-SEP, and other). Those projects serve to disseminate information and know-how about energy services, draft of sample contracts and help remove barriers to the implementation of EPC projects and support transparency of the market.

It is expected that implementation of the new Energy Efficiency Directive will further enhance the development of EPC market; however, implementation has not started yet.

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5 Identified Barriers

Previous reports on the status and barriers on EPC market in the Czech Republic (Sochor and Szomolányiová 2009 or Sochor and Valentová 2009) identified the main barriers to be the lack of support from the government, lack of awareness and therefore trust in EPC services by customers and lack of clear (legal) conditions for EPC projects.

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

5.1 Regulatory and administrative barriers

This section provides an overview of the main regulatory barriers, with a focus on barriers in the public sector.

5.1.1 General regulatory barriers

Report of ChangeBest project (Sochor and Szomolányiová 2009) highlights the unclear legislation and rules. It notes, that dissemination of EPC would be very much eased had the rules for EPC implementation in the public sector, i.e. project registration and approval, project accounting etc., been amended. Unclear rules discourage many institutions from taking part.

This view is confirmed by the answers of ESCOs provided within the Transparense survey, who conclude that the lack of governmental support to EPC is one of the key factors hindering faster EPC market development. All the ESCOs from the survey find the governmental policies in place as ineffective.

The JRC report on ESCOs (Marino et al. 2010) finds that the main obstacle to the implementation of EPC projects in the Czech Republic is “the mistrust from clients towards ESCO projects”, which is among others based on complexity of EPC projects and unclear standpoint of the government (and consequently framework conditions) towards EPC. Connected with that, lack of political stability seems to further undermine the development of the EPC market. Thus establishing clear conditions for the EPC market would support its growth.

In addition, designing the appropriate conditions of the subsidy policies in the area of energy efficiency could help substantially to utilise existing large potential in the combination of EPC projects with the subsidized construction projects. In the last programming period 2007 – 2013 of the Operational programme Environment, there has been a large amount of funding

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dedicated to energy efficiency construction measures (namely insulation) in the public sector. Several projects combining the subsidized construction measures (insulation) and EPC method (for technology measures) have been implemented. Such combination is highly favourable, as it brings higher energy savings (up to 60 %), allows investing in technologies with longer pay-back and may also increase the quality of the realization as ESCOs can provide the engineering supervision to the whole project. This type of projects is, however, rather demanding in terms of organization. So far, such projects have only been a result of efforts of individuals, without any additional support in the operational programme itself, therefore basically forgoing large part of economic energy saving potential.

5.1.2 Regulatory and administrative barriers in the public sector

As mentioned above, so far, all EPC projects have been realized thanks to the bottom-up initiatives of ESCOs and EPC facilitators. Therefore, lack of state support and strategic framework on EPC development are perceived as one of the main barriers. As report on barriers of the ChangeBest project (Sochor and Szomolányiová 2009) observes, the EPC market suffers both from low level of interest of state administration in EPC implementation combined and the lack of capacities and motivation within the employees of the public institutions to deal with the more complicated EPC procedures.

Secondly, a significant barrier is the actual inability to implement EPC projects in one large part of public facilities – the ones owned by “organisational units of the state”. Until now, the EPC projects have been implemented mostly in one type of the public organisation only, the state “allowance organisations”. While these organisations are allowed to receive supplier credits for financing of programmes, the second main type of public organisation - “organisational units of the state” - are not allowed to do so, which provides a major barrier to the EPC implementation on their facilities¹⁰.

Application of projects using the EPC method to assets in the public sector and their relations to accounting are mainly governed by the budgetary rules and ordinance on financing programmes of reproduction of assets from the state budget.

In contrast to the allowance organisations, organisational units of the state pursuant to Section 49 of Act no. 218/2000 “are not allowed to receive or provide loans”. Therefore, to date it has not been possible to finance EPC projects within organisational units of the state by way of a supplier credit. Therefore, currently, the only way of financing EPC projects has

¹⁰ To give an idea, allowance organizations are typically education or healthcare facilities, usually owned by municipalities, whereas organizational units of the state would be all organizations of state administration or institutions financed directly from state budget including for instance ministries and other administrative bodies such as social services, police and military facilities, courts and other.

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been exclusively through special-purpose “capital investments” from the state budget (as stipulated in the current wording of the Act on budgetary rules), which is not very feasible from the practical point of view.

Furthermore, the standpoint of the Ministry of Finance towards Energy Performance Contracting has been rather negative stating that it is a form of “secret credit financing”. Therefore the only feasible way to induce EPC projects in the “state organizations” so far seems to be the change in the above Act.

It is believed that the Energy Efficiency Directive may act as a catalyst to such a change, namely through article 19, which requires Member states to remove barriers as regards “legal and regulatory provisions, and administrative practices, regarding public purchasing and annual budgeting and accounting, with a view to ensuring that individual public bodies are not deterred from making investments in improving energy efficiency” (EU 2012).

5.2 Structural barriers

When implementing EPC within the public sector (property and buildings managed by the state, regions and municipalities), the barrier of split incentives often arises. It happens when the managers of the publicly owned facilities have limited access to the achieved savings on the energy bills, which tend to be taken by the owner - the local government or the state. In such case the manager of the site has little motivation to implement an EPC project. Some public organisations are able to retain the benefits of cost savings; however other ones are not allowed to do so. It is up to the relevant founder or budget provider to decide whether a part of the savings will be left to that subject also during the term of the contract.

In the Czech Republic, hospitals typically keep the full savings to themselves due to the higher autonomy as they receive direct financial flows from the insurance companies. On the other hand, schools do not have direct access to those savings, as they are financed from the municipal budget where often the cost savings are retained. A site manager may solve this problem by appropriate pre-project negotiation during which the municipality as a school owner agrees to share the cost savings with the school.

Respondents in the Transparense EPC Survey further mention the complexity of the whole EPC process and lack of information as an important structural barrier. The decision makers in the public sector may fear the complexity of the evaluation process or even interpretations claiming such process is conflicting with the requirements by the Public Procurement Act. In contrast to the regular public tenders where the lowest price is the

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decision factor, in the EPC tender different criteria need to be applied, with a key weight given to the volume of energy and cost savings.

The ESCOs further point out that the trust in the ESCO industry in general is rather low. It is also one of the reasons why the ESCO Association was founded and has been working on standardization of the whole industry since then.

Interestingly, financial crisis (and subsequent economic recession) in recent years is seen both as a barrier and as an opportunity or even a success factor by the ESCOs. On one hand, the public sector may be reluctant to increase their level of indebtedness, on the other hand the need for cost savings and budget austerity are seen as one of the main drivers for EPC business.

5.3 Financial barriers

In the survey, most ESCOs find the obtaining workable finance for a good/viable project as easy and believe they are able to obtain commercially viable terms and rates of interest from funders quite easily when setting up EPCs. Therefore, ESCOs do not consider the scale of finance required to set up an EPC as an obstacle.

Marino et. al (2010) point out, that to some extent financial crisis has reopened financing as one of the barriers mainly in the private sector due to long-term nature of EPC contracts and related higher business and financial risks. Nevertheless, in the public sector, budget austerity in the financial crisis is perceived to have induced more projects.

Having said that, it is also perceived that one of the risks in public sector organizations is the level of their indebtedness. If it is too high, it may decrease their willingness and ability of the municipalities to take new long-term liabilities, such as EPC (even though it actually saves public money).

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6 Success factors

EPC market in the Czech Republic ranks among the developed ones in Europe. Over its 20+ years history, over 150 high quality EPC projects have been implemented. This is mainly thanks to the continuous work of individual ESCOs and EPC facilitators who keep explaining and marketing the advantages of EPC and have also developed detailed EPC procedures and standard documents. The bottom-up hard work and willingness to explore new paths would be the main success factor in the Czech Republic.

Nevertheless, the last two years have also seen a few supporting governmental initiatives, such as subsidy to initial EPC feasibility studies or support to standardisation of Energy Performance Contract.

The following section therefore sums up the key success factors for EPC market development in the Czech Republic.

6.1 Successful regulatory models

In 2011, ESCOs in the Czech Republic founded their “Association of energy services providers” (Asociace poskytovatelů energetických služeb, APES). APES has been very active since its foundation in supporting expansion of the Czech EPC market by attempts to remove the existing barriers. It initiated the work on standardization of EPC model documents and works also on its code of conduct. In 2012, a high-end conference on EPC was organized, together with a number of smaller events and seminars. In addition, in 2011 and 2012 the competition for the best preparer of EPC project was announced. Winners were awarded in annual EPC conferences with high publicity, bringing further attention to EPC.

In 2012, for the first time the Ministry of Industry and Trade has included among its supported activities under its EFEKT programme the preparatory phase of EPC projects. It supports execution of an introductory analysis on suitability of the selected facilities for the EPC method. In total, 18 such studies have been supported, resulting in announcement of several public tenders in buildings suitable for EPC. The same form of support was announced in 2013 (results to be known in 2014). It must be noted though that the time schedule of the support is quite tough – the support is bound to the announcement of public tender for EPC within the same year in which the support to the feasibility study was granted (usually known around June that year). Therefore, the grant recipients (municipalities) have about half a year to organize the feasibility studies and the tender.

In 2012, based on the Resolution of the Government of the Czech Republic no. 109 dated 19 October 2011, as well as APES initiative, several standard documents for EPC were prepared.

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The documents are publicly available on the website of the Ministry of Industry and Trade. They include a revised version of Energy Performance Contract and detailed description of the process of EPC projects implementation including the procurement procedure in compliance with the public procurement law.

The current standard contract template reflects all the experience and knowledge gained over years. Importantly, it includes all the annexes to the contract, which in case of EPC projects represent the most important part of the contract. In addition, detailed description of the tender procedure has been prepared, including all the requirements for tender dossier.

In addition to the above factors, international projects (as mentioned in section 4) keep providing momentum to the EPC market development in the Czech Republic and helping EPC market actors (ESCOs and EPC facilitators) to raise awareness on EPC.

6.2 Successful structural models

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

Such a combination of measures proved to bring high energy savings of up to 60 % (SEVEN 2011), therefore much higher than in case only EPC or only construction measures are implemented. Combination of EPC project and subsidized energy efficiency measures in building envelope brings high synergies, as it allows to increase energy efficiency of a facility in a complex way, i.e. through combination of measures in building envelope, heat consumption, energy demand management and monitoring and other (such as water consumption, lighting, etc.).

In the new programming period 2014 – 2020, it is therefore recommended to set the programmes in a way that it is required to consider EPC method to be used in combination with the subsidized construction measures¹¹.

6.3 Successful financing models

In the last years, the ESCOs in the Czech Republic have started to use sale of claims (i.e. factoring) to finance the EPC projects. The preparatory phase of the project as well as installation of the measures is financed by the ESCOs. Once the technologies and energy

¹¹ More information on this topic can be found in CombinES project, <http://www.combines-ce.eu/>.

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efficiency measures are handed over to the customer, the receivable is assigned to a third party – the bank.

This allows ESCOs to enter other large EPC projects and keep their level of indebtedness on a low (acceptable) level. At the same time, it brings no changes to the EPC contract and guarantee of savings by the ESCO remain unchanged.

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Definitions and glossary

Term	Definition
energy efficiency (EE)	means the ratio of output of performance, service, goods or energy, to input of energy (as defined by EED)
energy efficiency improvement	means increase in energy efficiency as a result of technological, behavioural and/or economic changes (as defined in EN 15900:2010)
energy management system	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)
energy savings	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)
final energy consumption	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)
guarantee of energy efficiency improvement	means commitment of the service provider to achieve a quantified energy efficiency improvement (as defined in EN 15900:2010)
energy performance contracting (EPC)	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)
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
energy service provider /energy service	means a natural or legal person who delivers energy services or other energy efficiency improvement measures in a final customer's facility

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company (ESCO)

or premises (as defined by EED)

energy service (ES)

the physical benefit, utility or good derived from a combination of energy with energy-efficient technology or with action, which may include the operations, maintenance and control necessary to deliver the service, which is delivered on the basis of a contract and in normal circumstances has proven to result in verifiable and measurable or estimable energy efficiency improvement or primary energy savings (as defined by EED)