



Energy Performance Contracting - Near zero
Energy Performance Public Buildings and Sites

Energy Performance Contracting ('EPC') is defined as "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"

EPC constitutes an innovative financing technique of energy efficient public buildings that uses cost savings from reduced energy consumption to repay the cost of installing energy conservation measures. The contractor, usually an Energy Service Company ('ESCO'), bears the costs of the energy improvements, and is paid back from the value of the energy savings (for a contractual period between 5 and 10 years that should allow for a cost-effective investment). The public purchaser/owner of the building will be able to capture the benefits of energy savings (after the expiry of the pay-back period) without having to undertake upfront capital expenses. The ESCO has the advantage of being able to centralize the performance of various activities (energy audits, retrofitting, and guaranteed energy savings from a selected range of conservation measures)².

According to the European Commission's Energy Efficiency Plan 2011³, energy performance contracting has proven to be an important tool in the refurbishment of buildings. There are a considerable number of successful EPC projects developed in different Member States⁴. The main advantage of this technique lies in the fact that monetary savings from lower utility bills and maintenance costs resulting

from energy efficiency measures are used to cover all or part of the investment costs entailed by those measures. However, the deployment of energy performance contracting is hampered in many Member States by ambiguities in the legal framework and the lack of reliable energy consumption data to establish the baselines against which performance is measured⁵. Moreover, lack of awareness, policies and support mechanisms along with public sector capacity constraints create difficulties for energy performance contracting⁶.

How has the EU been trying to tackle climate change and how can EPC be helpful?

The currently enforceable EU legal framework on climate change aims to achieve three targets by 2020 ("20-20-20 targets"): (i) a 20% reduction of greenhouse gas (GHG) emissions compared to 1990 levels; (ii) a 20% share of energy consumption originating from renewable energy sources; and (iii) a 20% reduction in primary energy saving use based on projected levels.

In order to achieve the first target, a series of legislative efforts were made, the most important of which are the revised Emission



Trading Scheme (ETS) Directive⁷, and the Effort Sharing decision⁸. The latter imposes an obligation on Member States to cut EU-wide GHG emissions by 10% compared to 2005 levels in non-ETS sectors, which include the building sector. Each Member State is bound by a specific GHG emission limit depending on its respective GDP per capita in order to achieve the non-ETS collective target of 10%. EPC projects are likely to be more popular in Member States enjoying high GDP⁹ and accordingly subject to a more demanding GHG emission limit.

The second target, namely the increase in energy use from renewable sources, is addressed mainly through the Renewable Energy Directive (RED)¹⁰. The latter calls for mandatory 20% share of renewable energy in the EU's gross final consumption of energy by 2020. The RED imposes differing renewable energy percentage targets upon Member States in addition to the uniform 10% target with respect to the share of biofuels in the EU's gross final consumption of energy in the transport sector. ESCO's often come

up with EPC proposals, where energy from renewable sources is used to decrease energy bills of the concerned public building.

The third target asks for decreased utilization of energy input, in particular in the buildings sector. The EU adopted different legislative acts on energy efficiency in buildings¹¹. In March 2011, the Commission adopted its Energy Efficiency Plan (Plan)¹² which suggests the adoption of measures to improve energy efficiency, such as binding energy audit requirements, ecodesign requirements and a more extensive use of energy management systems. The Plan also provides for the application of high standards of energy efficiency on public authorities. In this context, EPC constitutes a practical response to Member States' obligation to enhance the energy efficiency of public sector buildings, which could result in a considerable decrease in energy consumption (up to 50% for some projects), in order to achieve the second target of the EU framework on climate change.



The energy efficiency target has also been implemented (albeit partially) through the Proposal for a Directive of the European Parliament and of the Council on energy efficiency and repealing Directives 2004/8/EC and 2006/32/EC ('Proposed Energy Efficiency Directive'), which still awaits signature before it can be published in the Official Journal. This Directive, once in force, will set a common framework for promoting energy efficiency. The Commission's proposal, in its latest version, has been amended and adopted by the European Parliament on 4 October 2012. The Parliament's amendments reflect a compromise between the Parliament's and the Council's concerns with the original Commission's Proposal. Noteworthy in the final text of the Proposed Energy Efficiency Directive and in contrast with the initial Commission's Proposal is the absence of set national energy efficiency targets for 2020: Member States instead will only be required to determine an indicative national energy efficiency target, based on either primary or final energy consumption, primary or final energy savings or energy intensity.

Also characteristic of the final text is the insistence on the exemplary role to be played by public bodies' buildings as well as the requirement placed on Member States to set up an energy efficiency obligation scheme¹³.

The reduction of energy consumption and the use of energy from renewable sources in the buildings sector¹⁴ constitute important measures needed to reduce the Union's energy dependency and GHG emissions. For this purpose, EPC is promoted by the EU as an effective tool for achieving the 20-20-20 targets. The EPC is expected to meet further growth in the coming years due to its multiple benefits for all involved parties. Those benefits are explained below.

Main Rules Regulating EPC Under the Proposed Energy Efficiency Directive

The main rules concerning the regulatory treatment of EPCs under the Proposed Energy Efficiency Directive can be summarized as follows:

- Member States are required, where appropriate, to remove the regulatory and non-regulatory barriers that prevent the uptake of energy performance contracting for the identification and/or implementation of energy saving measures (see Article 14 2. b));
- Member States must support the public sector in taking up energy service offers by providing model EPC

contracts that cover Annex XIII's list of minimum items and by providing information on EPC best practices (e.g., cost and benefit analysis using a life-cycle approach) (see Article 14 eb));

- Energy performance contracts (model contracts) with the public sector or in associated tender specifications must address the following minimum items: (i) clear and transparent list of the efficiency measures to be implemented or of the efficiency results to be achieved; (ii) guaranteed savings to be achieved through the implementation of the contract's measures; (iii) duration and milestones of the contract, terms and period of notice; (iv) clear and transparent list of each contracting party's obligations; (v) reference date(s) to establish achieved savings; (vi) clear and transparent list of steps to be performed to implement a measure or package of measures and, where relevant, associated costs; (vii) obligation to fully implement the measures in the contract and documentation of all changes made during the project; (viii) regulations specifying the inclusion of equivalent requirements in any subcontracting with third parties; (ix) clear and transparent display of financial implications of the project and distribution of the share of both parties in the monetary savings achieved; and (x) clear and transparent provisions on measurement and verification of the guaranteed savings achieved, quality checks and guarantees (see Annex XIII).

How does EPC work in practice?

Most EPC projects are developed in five structured phases. Governments can usually provide assistance to their agencies or municipalities during those phases of the process through technical and procurement experts¹⁵. Of course, ESCO's will have their own experts who will design the project and be responsible for the execution of the works.

(i) Project Planning

During this first phase of the project, the interested public entity will explore the potential for energy saving via EPC. In many Member States, a minimum amount of energy spending annually is set out to allow for the economic viability of the project¹⁶. When this amount is not met, different buildings may be bundled into one contract based on the criteria of physical proximity and similarity in energy consumption.

A team composed of key personnel of the public entity usually handles the first administrative part of the procedure which includes the publication of the intent to commence an EPC project and the conduct of energy audits to evaluate the bids submitted by the interested energy service companies. Member States' relevant public procurement laws define the particulars of this process, which also depend on the type of work and goods required for the functional operation of the energy saving project¹⁷.

A rather popular and successful way of carrying out projects of this type is through Public Private Partnership (PPP). PPPs constitute a form of cooperation between public authorities and economic operators. The primary goals of this cooperation are to fund, construct, renovate or operate an infrastructure or the provision of a service.

There is no specific legal framework for PPPs at European level. The Green Paper on public-private partnerships and Community law on public contracts and concessions¹⁸ lays down the framework for carrying out PPP's. The paper establishes that any act, whether it be contractual or unilateral, whereby a public entity entrusts the provision of an economic activity to a third party must be examined in light of the rules and principles stemming from the Treaty for the Functioning of the European Union (TFEU), in particular the freedom of establishment and freedom to provide services, the principles of transparency, equality of treatment, proportionality and the principal of mutual recognition.

An EPC project, which pre-supposes an agreement for the renovation of a public building for energy efficiency purposes, will likely entail the conclusion of a public works contract between the public entity and the ESCO awarded with the project. In any event, the procedure followed by the public entity before and after the selection of the successful bidder (see below) must comply with the relevant EU public procurement rules¹⁹, as transposed in the national law of the Member State where the project takes place.

The larger the project, the greater the amount of time should be invested when preparing the tender documents. Energy service companies may withdraw or make amendments to their bids in this phase.



(ii) Selection of the successful bidder

The selection of the energy service company in charge of implementing its energy saving program through the renovation of the building depends on many different factors, amongst which the best value for the public entity. Best value is determined by a combination of cost and efficiency criteria. A comparative approach between different bids or between past successful projects of a similar nature is often relied upon. A successful bid will always contain an analytical description of the project's financial requirements and a precise scientific assessment of projected energy savings based on the data already available. Moreover, the application file must contain sufficient guarantees e.g. updated financial statements every 6 or 12 months or an irrevocable letter of guarantee by the bank which will be asked to pay out in case of an event of default by the ESCO.

(iii) Investment Assessment and Project Development

The selection of the successful bid and the relevant communication to the selected ESCO are followed by a request for a submission of a final proposal, containing the final investment assessment, namely the fixed price of the required energy saving, technical measures of the renovation and an estimated sum of energy savings, usually on an annual basis. Other terms of the contract are subject to negotiation in this

phase. These include ownership of the property, conditions governing delays for installation works, poor operation of the system, contract termination and damage claim, insolvency and dispute resolution.

(iv) Construction

Construction of the project usually begins immediately after the conclusion of the final terms of the contract. The ESCO takes responsibility for commencing all necessary works on the site and employing the required personnel. All works shall abide by the time limit agreed upon in the contract. During the construction phase, arrangements are usually made for the temporary relocation of government employees who are working in the buildings under renovation. It must be noted that the energy performance measures incorporated in the building must remain installed in order for the investment to repay at the agreed time. State liability in case of unjustified removal of those installations shall not be excluded.

(v) Performance Period

This phase follows the completion of the project, the inspection by the public entity's representatives and its acceptance of the delivered building. Payment of the ESCO is conducted from the net amount of the savings in energy costs generated by the project, and continues up to the end of the contractually agreed repayment period. Typically, the ESCO uses part of those

funds to repay in turn the lender(s) who made the initial financial investment for the provision of the renovations costs. Withholding of payments can occur if the performance does not meet the initial assessment or if the ESCO fails to repair any operational malfunctions in the project²⁰.

How is an EPC project financed?

Most of the energy performance projects are designed to save a major amount of energy costs through a complete renovation of public sector buildings. This cannot happen without considerable investment on the part of the constructor who is called upon to procure the requisite materials and to employ often numerous staff, with a view to carrying out the construction works. Energy service companies cannot individually bear such an investment and must, most of the time, choose between different forms of financing.



Different ways, both traditional and alternative, of financing EPC projects exist throughout Europe. Commercial bank and governmental loans are typical examples of traditional financing. Given that commercial bank loans' current increased interest rates are subject to market instability and that governmental loans have limited availability, these traditional sources of funding are not particularly appealing. Bonds are often used, mainly due to their comparative advantages vis-à-vis traditional methods of financing. Lately, hedge and pension funds have shown an interest in extending their investment activities to EPC projects, often by making use of a Special Purpose Vehicle (SPV).

Many investors in the EU see a great opportunity in EPC. They consider it to be a profitable and sustainable placement due to the guaranteed income generated by the net difference between the previous and the current energy bill²¹.

Governments increasingly consider adopting EPC on a massive scale in order to renovate their buildings according to energy-efficient standards and to meet their obligations of a 20% energy efficiency increase by 2020. For this reason, they are putting in place flexible regulatory frameworks that allow investors to provide energy service companies with funding.

The EPC vehicle must be subject to Value Added Tax (VAT) in order to allow for the tax deductions during the renovation process

What are the main benefits of EPC?

The unique advantage of EPC compared to other forms of contractual project finance is that all parties to the contract benefit from entering into the agreement. The government renovates its building at zero cost,²² and meets its obligations to decrease energy consumption in the short term whilst benefiting from considerably decreased energy bills in the long term (after payment of the ESCO). In addition, EPC is also beneficial for commercial and industrial facilities that use performance contracts. Commercial operators may require shorter paybacks on investments (1-2 years) and this may limit the scope of private sector performance contracts. However financing models exist to account for shorter term payback needs²³. The ESCO establishes a fixed payment deriving from the net amount of the difference in energy cost before and after the renovation. The scheme that funds the project also receives a secure full repayment with the applicable interest rates due to the guaranteed income of the ESCO.

Other benefits for governments engaging in EPC, which explain even more clearly the growth potential of this area, include: (i) the minimization or even disappearance of the need to invest in installations; (ii) operation and maintenance are usually handled by the company that constructed the project; and (iii) the value of the building is increased, and the employees enjoy better working conditions.

EPC allows to simultaneously cut costs, create jobs and increase energy security supply without putting extra pressure on already strained budgets.

Recourse to EPC will result in a higher level of environmental protection achieved through the renovation of public sector buildings designed to become more energy efficient. The successful use of EPC by governments may well lead to the extension of this method to the private sector.

Conclusions

Historically, most energy efficient projects in public sector buildings were funded by the governments themselves using tax appropriations. Given that the current global recession limits the available public funds, the appropriations funded projects will probably have their place taken by EPC. Based on a simple yet efficient mechanism, EPC uses cost-savings from reduced energy consumption to repay the cost of renovation via energy conservation measures benefiting all the parties involved.

The EU, as part of its commitment to increase energy efficiency, has been encouraging the use of EPC by governments that need to renovate their buildings in order to meet relevant obligations under EU law. Investors aiming for long-term sustainable investment opportunities should turn to EPC due to the obvious guaranteed income that this mechanism secures. Due to the profit and loss sharing under the investment, these are accessible for ethical and Islamic investors.

Finally, it must be borne in mind that, despite its obvious benefits, EPC still constitutes a complex contractual tailor-made commitment and teaming arrangements, the terms of which are highly detailed and technical. Those interested in EPC investment schemes must attend to the advice of experienced attorneys at all phases of the EPC process.

Footnotes

¹Proposal for a Directive of the European Parliament and of the Council on energy efficiency and repealing Directives 2004/8/EC and 2006/32/EC, Brussels 27 June 2012. 2011/0172 (COD).

²Commission staff working document accompanying the communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - Public procurement for a better environment, COM(2008) 400 final, Brussels 16 July 2008.

³COM(2011) 109 final COM(2011) 109, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Energy Efficiency Plan 2011.

⁴Those Member States include France, Denmark, Germany and the United Kingdom.

⁵Supra note 3.

⁶See the Institute's for Building Efficiency (IBE) issue brief, page 4, available at: <http://www.institutebe.com/InstituteBE/media/Library/Resources/Existing%20Building%20Retrofits/Issue-Brief---Energy-Performance-Contracting-in-the-EU.pdf>

⁷Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community, 2009 OJ L 140/63.

⁸Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020, OJ L 140/136.

⁹Such as Luxembourg, Ireland, Germany, the UK, Denmark.

¹⁰Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, 2009 OJ L 140/16.

¹¹Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings, as amended, was repealed by Directive 2010/31/EU of the European Parliament and of the Council of 17 May 2010 on the energy performance of buildings, 2010 OJ L 153/113. The recast Directive entered into force on 8 July 2010 although the repeal of Directive 2002/91 took place on 1 February 2012. Directive 2010/31/EU was supplemented by Commission Delegated Regulation (EU) No 244/2012 of 16 January 2012

supplementing Directive 2010/31/EU of the European Parliament and of the Council on the energy performance of buildings by establishing a comparative methodology framework for calculating cost-optimal levels of minimum energy performance requirements for buildings and building elements, 2012 OJ L 81/18.

¹²Supra note 3.

¹³<http://www.europarl.europa.eu/oeil/popups/printficheglobal.pdf?id=592474&l=en>

¹⁴It is worth mentioning that buildings account for 40% of the total energy consumption in the EU.

¹⁵This seems to be the case on both sides of the Atlantic. In the US, teams of technical consultants and EPC experts are created at both state and federal levels to assist governmental agencies in dealing with EPC issues.

¹⁶For instance, in Germany only sites with energy bills of 100,000 €/year are authorized to engage in EPC.

¹⁷See International Energy Agency (Energy Conservation in Buildings and Community Systems), Best Practices Guidelines for Using Energy Performance Contracts to improve government buildings, Annex 46, May 2010, p. 7.

¹⁸Green Paper on public-private partnerships and Community law on public contracts and concessions, COM(2004) 327 final, Brussels 30 April 2004.

¹⁹Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts, 2004 OJ L 134/114.

²⁰For relevant model provisions on performance, see Institute for Building Efficiency, "Energy Performance Contracting in the European Union: Creating Common "Model" Definitions, Processes and Contracts, Institute for Building Efficiency, pp. 15-19.

²¹Moreover, an increasing number of Islamic investors are turning to EPC since this type of contracting is not only Sharia-compliant but also compatible with the principle of profit- and loss- sharing amongst participants who share common interests that can be satisfied in parallel

²²There is no upfront capital required.

²³See supra note 6

Further Information

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