December 2010

Standard EPC documents

I. Definitions

European Energy Service Initiative – EESI
IEE/08/581/SI2.528408

December 2010

Prepared by

Berliner Energieagentur GmbH

DEFINITIONS OF EPC AND ADVANCED EPC

1 EPC Definition of the EESI Project

Energy Performance Contracting (EPC) is a proven and cost-efficient instrument for tapping existing energy saving potentials in the buildings sector. An Energy Service Company (ESCO) implements a customized energy service package, consisting of planning, building, operation & maintenance, optimization, fuel purchase, (co-) financing and user behaviour.

The contract between ESCO and building owner contains guarantees for cost savings and takes over financial and technical risks of implementation and operation for the entire project duration of typically 5 to 15 years. The EPC service or main parts of it is paid by realized energy cost savings.

Typical modular scope of EPC:

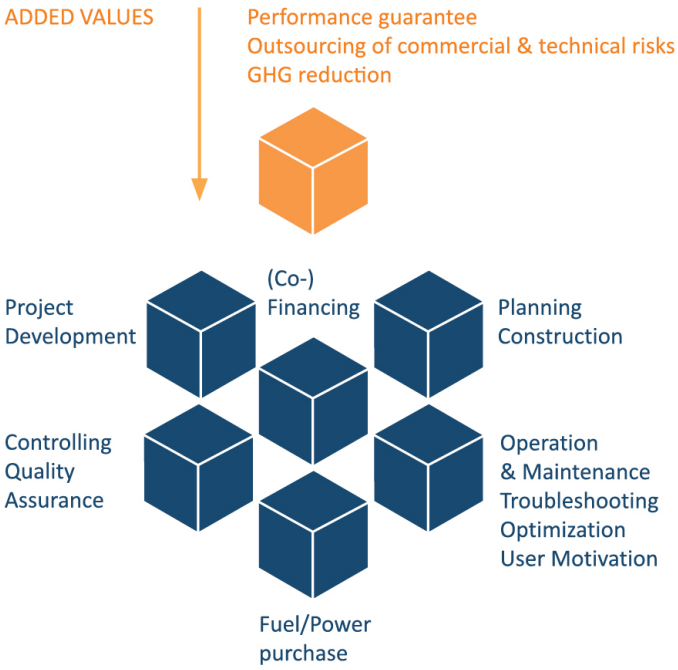

Fig. 1: EESI Scheme of Energy Performance Contracting (after Bleyl, Schinnerl 2008)

EPC deals with the optimisation across the trades of automation installations in buildings and building operation by an ESCO in the form of a co-operation based on partnership. Performance components of the ESCOs services are financing, planning and installation of components for energy generation, distribution and usage as well as their operation and maintenance. Integration and training of the users are often part of EPC.

Since there are various European model contracts and different approaches for EPC the EESI project defines the main distinguishing feature of EPC as the financing of the investments via the guaranteed cost savings achieved through improved energy efficiency.

Fields of application for EPC are objects of existing buildings. The most favourable customer group in Europe is the public sector. Several buildings may be combined into one contract as building pool.

2 Advanced EPC in the EESI project

The main strategic goal of EESI is the EPC market development in the participating countries. This aim is followed by intensive information and capacity building for local and regional decision makers, provision of helpful model documents, set-up of EPC help-desks and successful implementation of EPC pilot projects, including 6 projects of advanced EPC.

The idea of "Advanced EPC" is to develop and promote EPC models including new contract constructions, additional services or specific objectives as quality-based products. This aims to open up EPC to more customers groups by meeting their specific requirements. Accordingly, EESI will contribute to the cross-national establishment of such "Advanced EPC" with the following models:

"EPC plus" – EPC with comprehensive refurbishment:

EPC with comprehensive refurbishment extends the service of the ESCO to comprehensive structural measures on the building shell like insulation or window replacement. These services are usually not part of the classical EPC because of too long pay-back periods. The contractual arrangement within EPC plus therefore contains special regulation on financing. Usually the customer has to pay a share of the investment through a grant or by combination of EPC with subsidy programmes. The EPC plus model is furthermore extended with specific technical requirements on the building measures together with special regulations on interfaces and warranties.

EPC plus is very suitable in buildings with high needs for renovation. The combination of both structural renovation and energetic optimisation opens up organisational and technical synergies leading to high energy savings up to 50%.

"Integrated Energy Contracting (IEC)":

The Integrated Energy Contracting Model combines the objectives of reduction of energy demand through the implementation of energy efficiency measures and efficient supply of the remaining useful energy demand. The ESCO will take over implementation and operation of the energy service package at its' own expenses and responsibility according to the project specific requirements set by the client. In return, the ESCO will get remuneration for the useful energy delivered, depending on the actual consumption as well as a flat rate service remuneration for operation & maintenance, including quality assurance.

The business model of Integrated Energy Contracting is based upon the standard Energy Supply Contracting (ESC) model and is supplemented by quality assurance instruments for the energy efficiency measures as a substitute for the energy saving guarantee. In this context IEC is a combination of elements of ESC and EPC. This model is mainly used in Austria.

For details, please refer to discussion paper Integrated Energy Contracting (IEC).

"EPC light" – energy management with guaranteed elements:

Within EPC light energy savings are mainly achieved through organisational measures with low or no investments in technical equipment. The ESCO acts as external energy manager taking over the responsibility to operate and optimise the energy related installations (heat boilers, building automation, lighting control). Since pay-back of high investments on hardware is not necessary in EPC light, the contract duration is short (2-3 years). The main feature of EPC to guarantee savings and relate savings with the remuneration of the ESCO is included in the EPC light contract.

In EPC light the ESCO's service includes:

- Inventory of the installed technical equipment (if required)
- Continuous active optimisation of the heating, cooling, ventilation, lighting and other technical systems and documentation in operation manual
- Supervision of energy meters, continuous analyses of energy consumption, control of the energy bills
- Registration of changes in building use and coordination of adjustments with the building users
- Energy reports each half year, including reporting and proposals on required renovations
- Additionally possible: weak-point analyses of the buildings with proposals for investments in energy saving measures („mini-audits") and/or user motivation concept and implementation

The EPC light model is very interesting for customers with low capacities or no resources for sustainable energy management. Suitable buildings are all these, where classical EPC is not feasible by reason of small size, no security of utilisation for long contract durations or low investment needs. EPC light has proven to be effective as follow-up of a classical EPC contract or following energetic renovation measures undertaken by the customer.

"Green EPC" – EPC with special focus on renewable technologies:

The classical EPC has proven to be effective as energy saving instrument. The main focus is set on energy costs reduction by energy efficiency measures. Since climate protection is one major concern of policy and motivation to energy saving measures, advanced EPC models with special focus on reduction of green house gas emissions are essential.

EESI will try developing standards, models and examples with special focus on the implementation of primary energy savings and/or the technological focus on renewable energy technologies. These models are still under development.

Read more on the Advanced EPC in pilot project descriptions and further EESI materials.

http://www.european-energy-service-initiative.net

3 Other Definitions and Standards for EPC

European Commission (2006) "Energy Service Directive" (2006/32/EC)

The main European legal basis for EPC is the "Energy Service Directive" with purpose to make the end use of energy more economic and efficient e.g. by creating the conditions for the development and promotion of a market for energy services. Within this Directive EPC is defined as follows:

"Energy Performance Contracting (EPC): a contractual arrangement between the beneficiary and the provider (normally an ESCO) of an energy efficiency improvement measure, where investments in that measure are paid for in relation to a contractually agreed level of energy efficiency improvement."

"Energy Service Company (ESCO): a natural or legal person that delivers energy services and/or other energy efficiency improvement measures in a user's facility or premises, and accepts some degree of financial risk in so doing. The payment for the services delivered is based (either wholly or in part) on the achievement of energy efficiency improvements and on the meeting of the other agreed performance criteria."

European Standard EN 15900 "Energy efficiency services -Definitions and essential requirements" (10/2010)

The standard DIN EN 15900 specifies definitions and minimum requirements for energy efficiency services. This standard has been prepared to provide a guideline for both customers and providers of energy efficiency services in accordance with article 1 of Directive 2006/32/EC. It is applicable to all branches. This standard shall contribute to the development of a market for energy efficiency services. Content:

- Requirements of energy efficiency services
- Energy efficiency improvement actions
- Verification of energy efficiency improvement
- Description of the framework for the actions and the follow-up procedure