



STRENGTHENING NATIONAL CAPACITIES FOR URBAN PLANNING, HOUSING AND DISASTER RISK REDUCTION

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Urban Planning and Housing in BG

Urban planning - BG – member of EU from 2007 - Obligation to develop:

1. **National Regional Development Strategy** for urban planning with strategic framework of the government policy to achieve balanced and sustainable development of the regions and to address the intra and Inter -regional differences/inequalities in the context of pan-European cohesion policy , towards smart, sustainable and inclusive growth – EU strategies for 2020, 2030, 2050.
 - **Integrated plans for urban regeneration and development** - a combination of time and space connected projects, investment initiatives and actors, applicable in certain urban areas of intervention. A vision and strategic aims for development until 2020 and great opportunities for public - private partnerships, coordination and control.

Main institution , developing and coordinating the above acts throughout the whole country is the National Center for Regional Development - a Consulting Company under the umbrella of the Ministry for Regional development and Public works.

Housing/building stock – public and residential

- In 2012 the number of: the buildings in Bulgaria was 98 152, of the dwellings 3 909 348, from which 92% are privately owned. 18 900 are so cold “panel” buildings in which are living at about 1 900 000 of the population (7 245 000 people);
- Up to the national information system for energy efficiency, the number of the state and municipal buildings is 17 00;
- Big part of existing buildings (both residential and public) are old and with low energy efficiency performance.
- The buildings stock consumes 40% of the total energy and is responsible for 38 % of the CO₂ emissions. Reducing energy consumption in this area is therefore a priority under the “20-20-20” objectives on energy efficiency.

Obligations of BG under the EU legislation

- **Directive for Building energy performance: Objective: Nearly zero-energy buildings** - By 31 December 2020, all new buildings - nearly zero-energy consumption buildings. New buildings occupied and owned by public authorities shall comply with the same criteria by 31 December 2018;
- **Energy efficiency Directive (EED)**- Public sector to lead by example by renovating 3% of buildings owned and occupied by the central governments starting from 01 January 2014 .
- **Art 18 of the EED:** Member States shall promote the energy services market by:
 1. measures to remove the regulatory and non-regulatory barriers that impede the uptake of energy performance contracting and other energy efficiency service models for the identification and/or implementation of energy saving measures;
 2. enabling independent market intermediaries (facilitators, consultants) to play a role in stimulating market development on the demand and supply sides.



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The project EESI2020



EESI 2020 – „European Initiative for stimulating the development of the energy services market in order to achieve the 2020 target”

- **Main objective:**

Fostering the use of Energy Performance Contracting (EPC) in major cities and metropolitan regions across Europe such as Antwerp, Barcelona, Berlin, Dublin, Graz, Prague, Oslo, Sofia or Zagreb.

- **Aim:**

To address the non-technological barriers and to support the implementation of long-lasting local EPC programs: experienced EPC project facilitators will train professionals - assisting the public organs to implement EPC and multiply EPC concept in their region for achieving the 2020 targets.



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Partners

- Senior and junior partners.
- [ELI – Bulgaria](#)
- [REGEA – Croatia](#)
- [Codema – Ireland](#)
- [ICAEN – Spain](#)
- [Factor4 – Belgium](#)
- [BEA – Germany](#)
- [SEVEEn – Czech Republic](#)
- [NEE – Norway](#)
- [GEA – Austria](#)



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Steps

- Development of a DB for good EU practices + EPC documents and tools;
- Training of experts – facilitators assisting the
- EPC implementation process;
- Identification of projects, suitable for EPC implementation in the public sector;
- Development of concrete proposals for the application of EPC model in the partner-countries.





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EPC definition– up to EESI2020

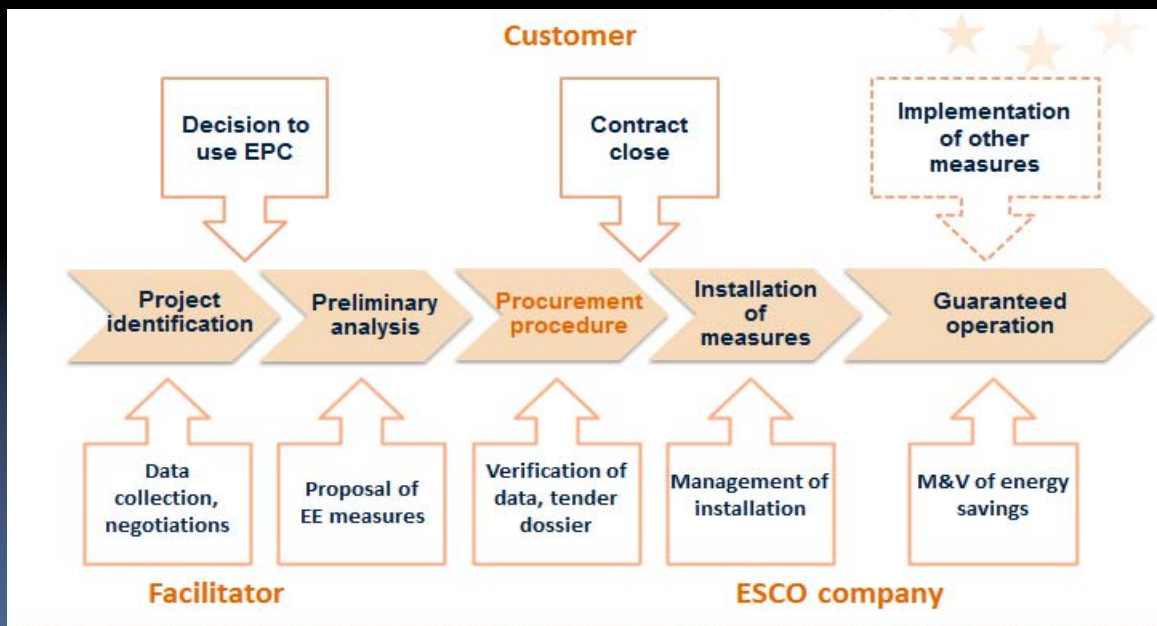
- Energy Performance Contracting (EPC) is a proven and cost-efficient instrument for realizing energy saving potentials in the buildings sector.
An Energy Service Company (ESCO) implements a customized energy service package, consisting of planning, building, operation & maintenance, optimization, fuel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



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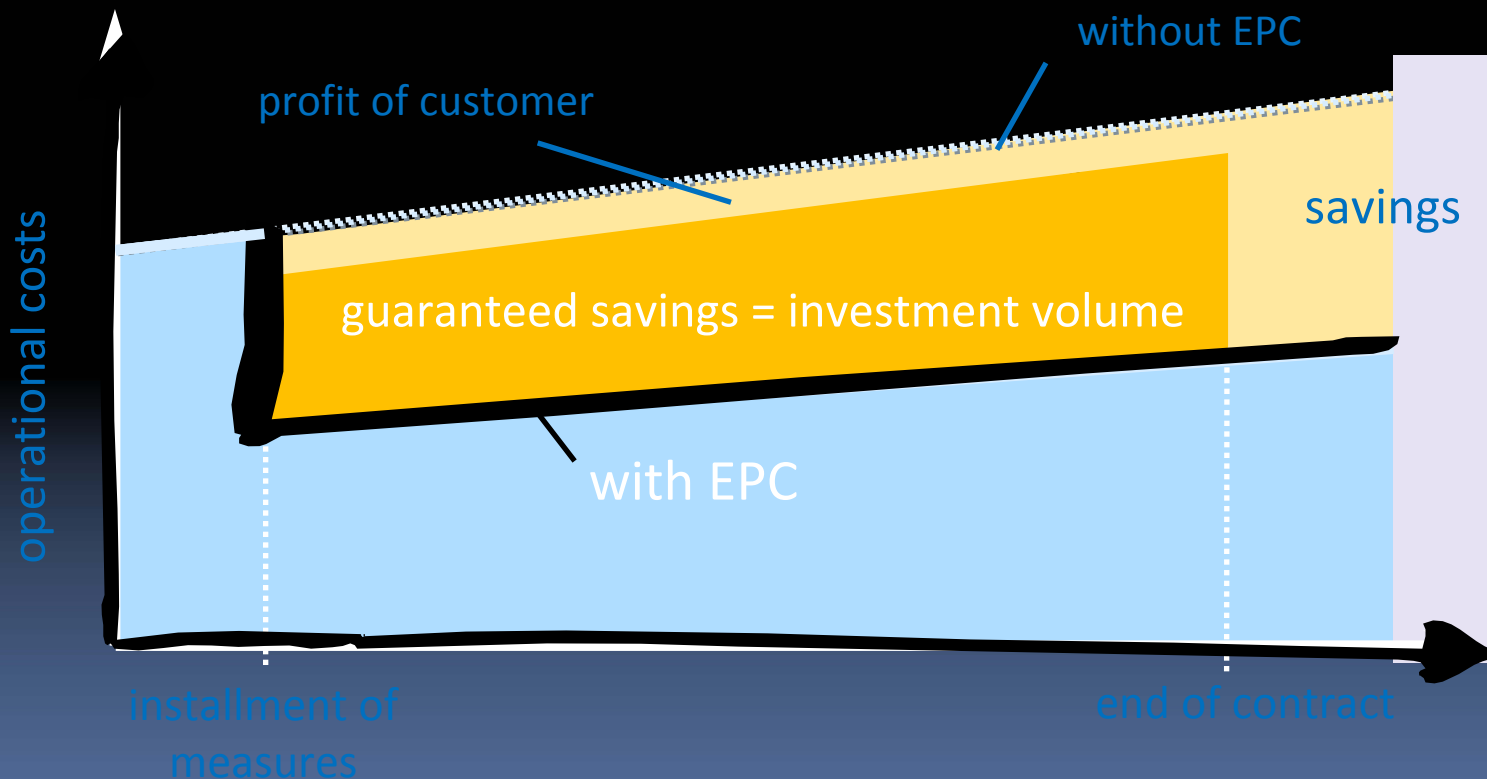
Process flow of an EPC-project





What EPC is

- A model for implementing EE measures with guaranteed results



The difference





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Advanced EPC



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- The main strategic goal of EESI is the EPC market development in the participating countries : intensive information campaigns and capacity building for local and regional decision makers, provision of helpful model documents, set-up of EPC help-desks , developing projects of **advanced EPC**.
- The idea of “Advanced EPC” is to develop and promote EPC models including new contract conditions . Aim- to open up EPC to more customers by meeting their specific requirements.



Advanced EPC' types -1

- EPC plus – EPC with comprehensive refurbishment includes structural measures on the building shell like insulation or window replacement. These services are usually not part of the classical EPC - long pay-back periods. Usually the customer has to pay a share of the investment. EPC plus is very suitable in buildings with high needs for renovation. The combination of both structural renovation and energetic optimization - high energy savings up to 50%;
- **Integrated EPC** - 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.



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Advanced EPC-2

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- 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;
- **EPC light** - energy savings are mainly achieved through organisational measures with low or no investments in technical equipment. The duration of the contract is only 2-3 years because there is usually no investment. EPC light can be used when customers have low or no resources for energy management;
- **EPC with comfort performance objectives** – for and building zones where employees work on a desk . The used tool is **Comfortmeter**, an European web based comfort survey tool developed in collaboration with several European universities. The tool polls the comfort experience of employees through 35 questions related to different **comfort aspects**, such as temperature, sound and air quality.



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Benefits

- **Guaranteed success of the project – the supplier provides** a contractual guarantee of achieved savings and return on investment;
- **Long-term reduction of energy consumption and other operational costs;**
- A single supplier implements the project from start to finish:
 - Prepares project documents
 - Implements planned measures
 - Guarantees the extent of achieved savings
- **The supplier and the customer share the same motivation** – ensuring the optimal extent of investment with the highest possible savings;
- Option of having the project financed by the energy service provider;
- Improved comfort levels in your buildings;
- Significant reduction of CO₂ emissions;
- Outsourcing of risks.



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Problems/barriers

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Main problems:

- Institutional problems - limited capacity of the public management bodies in the field of the design and execution of policies and programs for EE for their building stock;
- Financial barriers – difficult access to funds. Need of proven guarantees. BG banks have not the capacity for assessing the benefits of the projects for EE renovation. These benefits are often considered as purely “social” or “ecological”.
- Information barriers – lack of information on new financial models and innovative business partnership.
- Lack of national structures for ESCOs and market consultants – foreseen a DB.



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Initiatives

- In April, 2014 issued the first in EU EPC standard in Norway - NS6430 giving the main legislative framework for EPC : procedures, basic documents, standard EPCs and... ethic rules.



- In June, 2014 – created an European professional Code for the EPC – voluntary, defining the main benefits and principles, necessary for the success of the EPC. It serves as ethic framework for the decision making process and is addressed to: ESCO , customers and project facilitators.



- Developed DB with good practices and basic documents – www.eesi2020.eu



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The experience in Berlin

- In 1996 the City of Berlin in partnership with Berlin Energy Agency (BEA) developed an innovative model to improve energy efficiency in buildings together with the Senate Administration of Berlin called “Berlin Energy Saving Partnership”.

- **What is the Berlin Energy Saving Partnership and how does it work:**

The Senate Administration of Berlin offers building owners financial and technical assistance with regard to the tendering procedure of appropriate projects. BEA acts as independent project manager that moderates and manages the process from baseline to contract negotiation. Building owner combines several buildings to building pools, which are appropriate for tendering. ESCO finances retrofit investments in advance. Depending on agreed energy savings, building owners pay them back in annual installments over an agreed period (usually 8 to 12 years).

Until today, 1,300 buildings have been upgraded with total cost savings of about € 10,5 m or 26% of usual energy costs. Refurbished over 200,000 apartments, leading to an almost 50% energy savings in them.

In 2010, Berlin had already met its initial target of a 25 % reduction in greenhouse gas (GHG) emissions on 1990 levels. It now plans to reduce emissions by a total of 40 % by 2020 and to become carbon neutral by 2050.