



The Czech Experience in Energy Performance Contracts

Jaroslav Maroušek, SEVEn
Asociation of Energy Service Providers

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Key features of an Energy Performance Contracting (EPC) project (1/2):

- **Turnkey service:** The EPC provider provides all the services required to design and implement a comprehensive energy saving project at the customer's facility, from initial energy audit to measurement and verification (M&V) of savings
- **No need for up-front capital:** EE investments are repaid directly from energy savings and related financial savings, so there is no need for up-front capital from the customer
- **Risks for customers minimised:** The EPC provider assumes the contractually agreed performance risks of the project

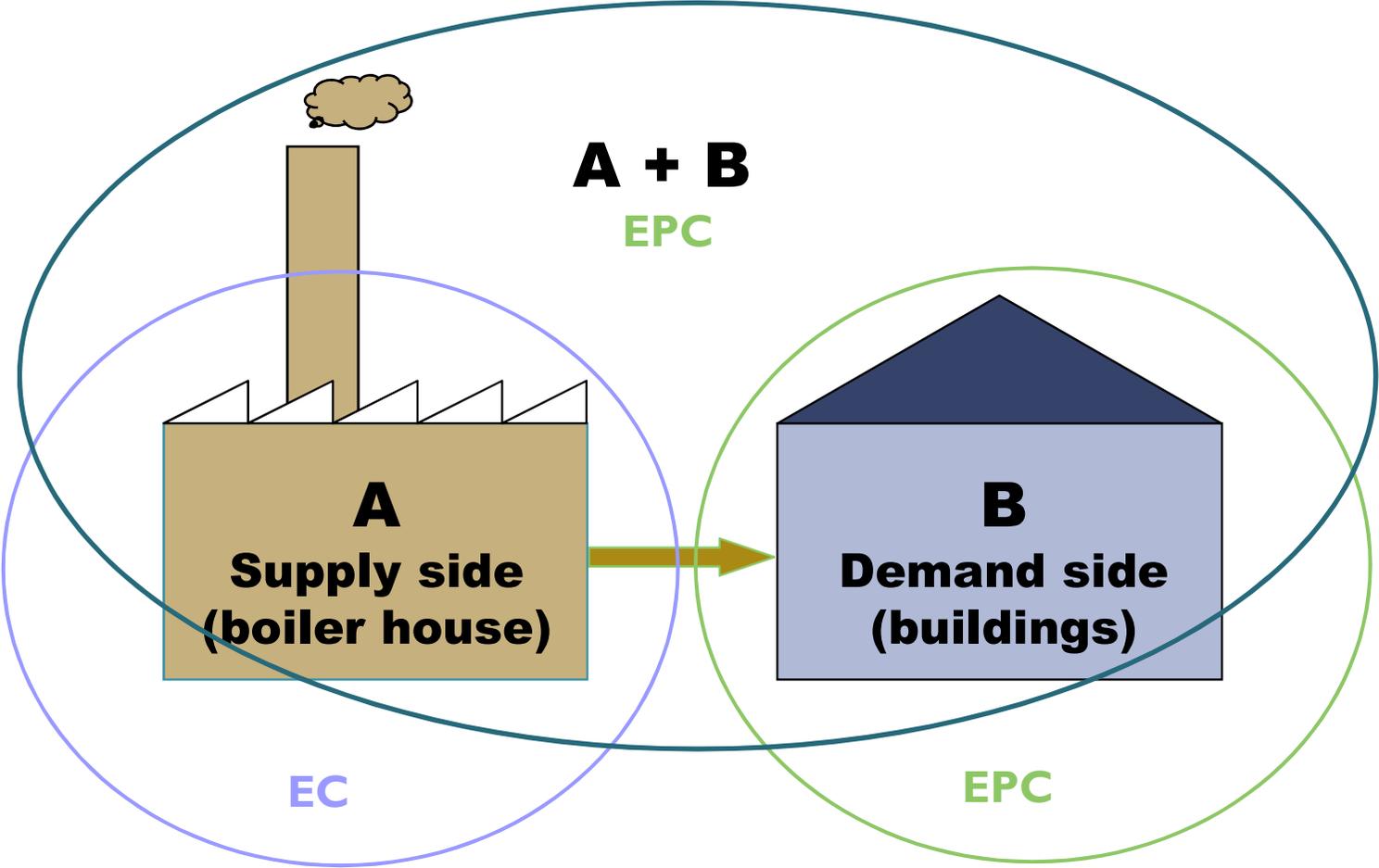
Key features of an Energy Performance Contracting (EPC) project (2/2):

- **Support in securing financing:** The capital to finance the EPC project can either be supplied out of the client's own funds or by the EPC provider or by a third party.
- **Savings guaranteed:** The EPC provider (ESCO) guarantees the achievement of the contractually agreed level of savings and is obliged to compensate savings shortfalls

Two main types of projects provided by ESCO:

- **Energy Performance Contracting (EPC) / Guaranteed savings model**
 - Implementation of energy saving measures with ongoing monitoring & verification services to provide guaranteed energy savings. Payment is based on the amount of energy savings.
 - ESCO delivers a complete reconstruction with savings guarantees
- **Energy Supply Contracting (ESC) / Energy Contracting (EC)**
 - Efficient supply of energy such as heat, steam or electricity is contracted, measured and delivered in physical units.
 - Usually focused on boiler house only. Payment is based on the amount of energy delivered.

Premises suitable for Energy Performance Contracting (EPC) and for Energy Supply Contracting (EC)



Financing Schemes of EPC Projects

A. Third party financing

- A.1 Credit of ESCO
- A.2 Credit of customer
- A.3 Assignment of claims

B. ESCO financing

- financing with internal funds of the ESCO (very seldom)

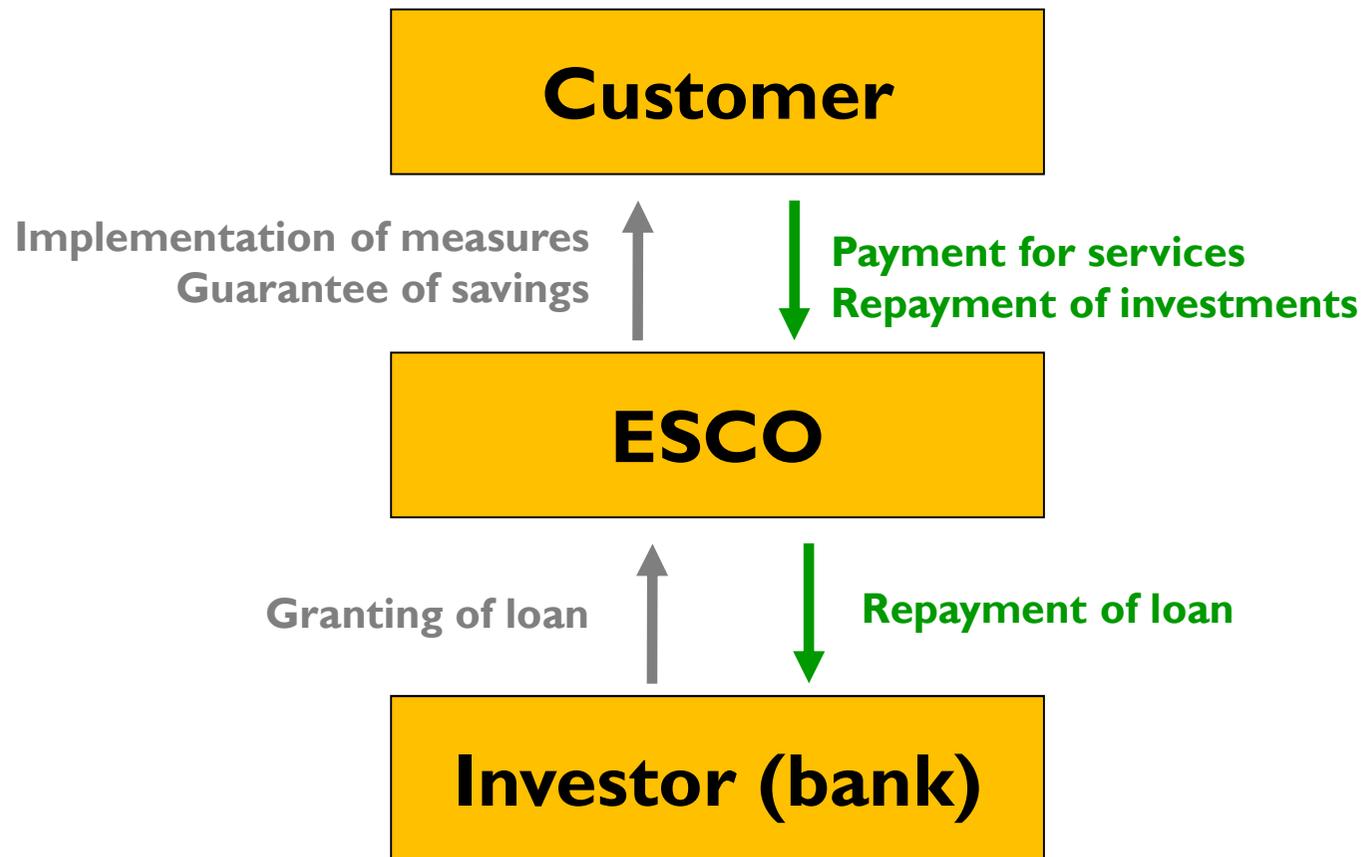
C. Customer's financing

- involves financing with internal funds of the customer backed by an energy savings guarantee provided by the ESCO
- may also be associated with borrowing, but it comes from the customer's internal Capital Expenditure (CAPEX) budget and existing lines of credit

A.I Third party financing/credit of ESCO

- The ESCO
 - takes the credit, i.e. ensures financing of the EPC project in its own name
 - bears the whole risk of the project failure, even if the cause was out of its control
- The customer
 - does not meet with the source of financing (usually a bank) as can be seen from the following figure

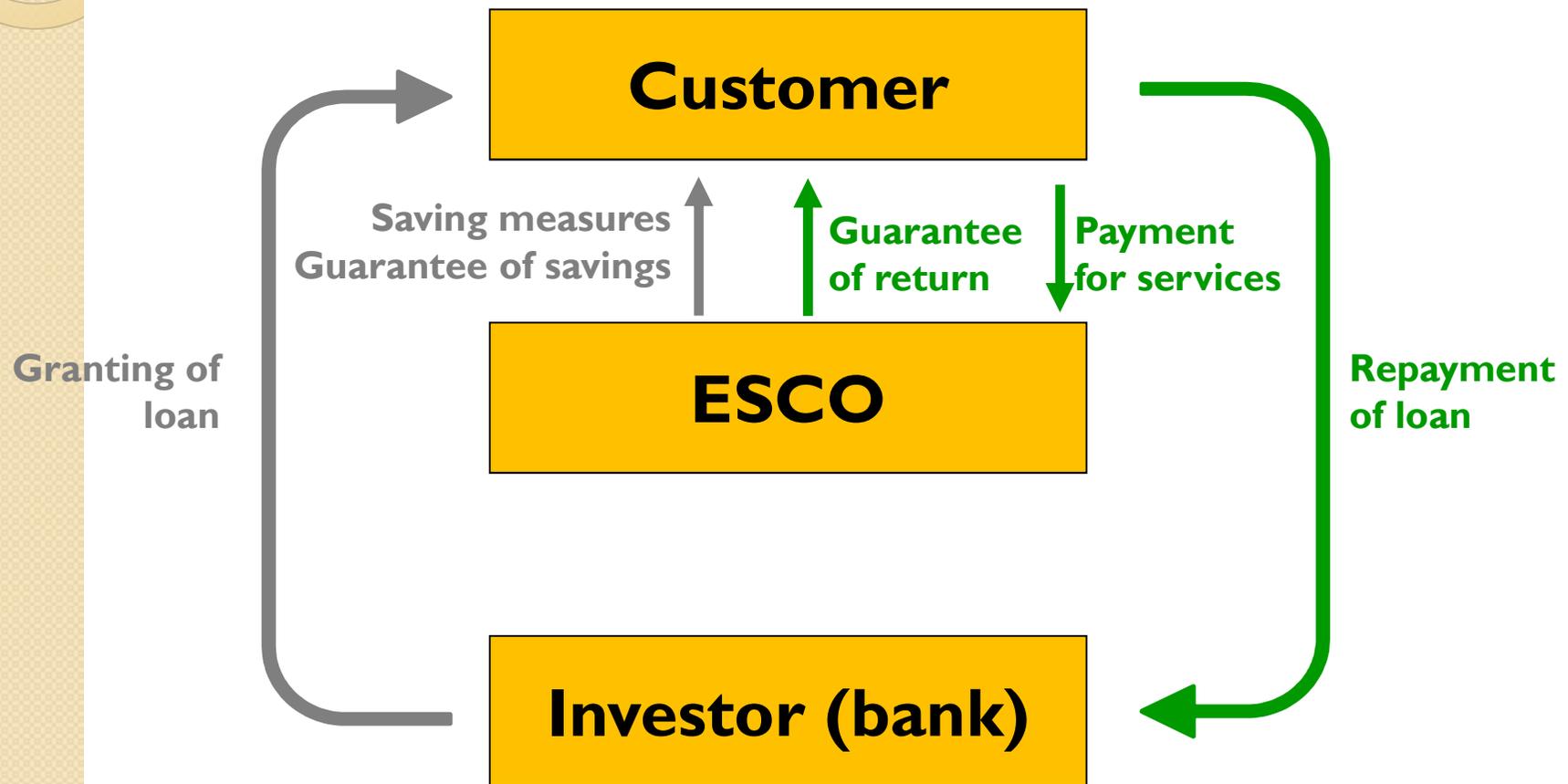
A.I Third party financing/credit of ESCO



A.2 Third party financing / customer's credit

- The customer
 - concludes a contract directly with the source of financing (usually bank)
- The ESCO
 - “only” guarantees the achievement of technical parameters of the project
 - if the assumed parameters are not achieved due to the ESCO's responsibility, the ESCO is obliged to even up the difference between the actual level of savings and the instalment

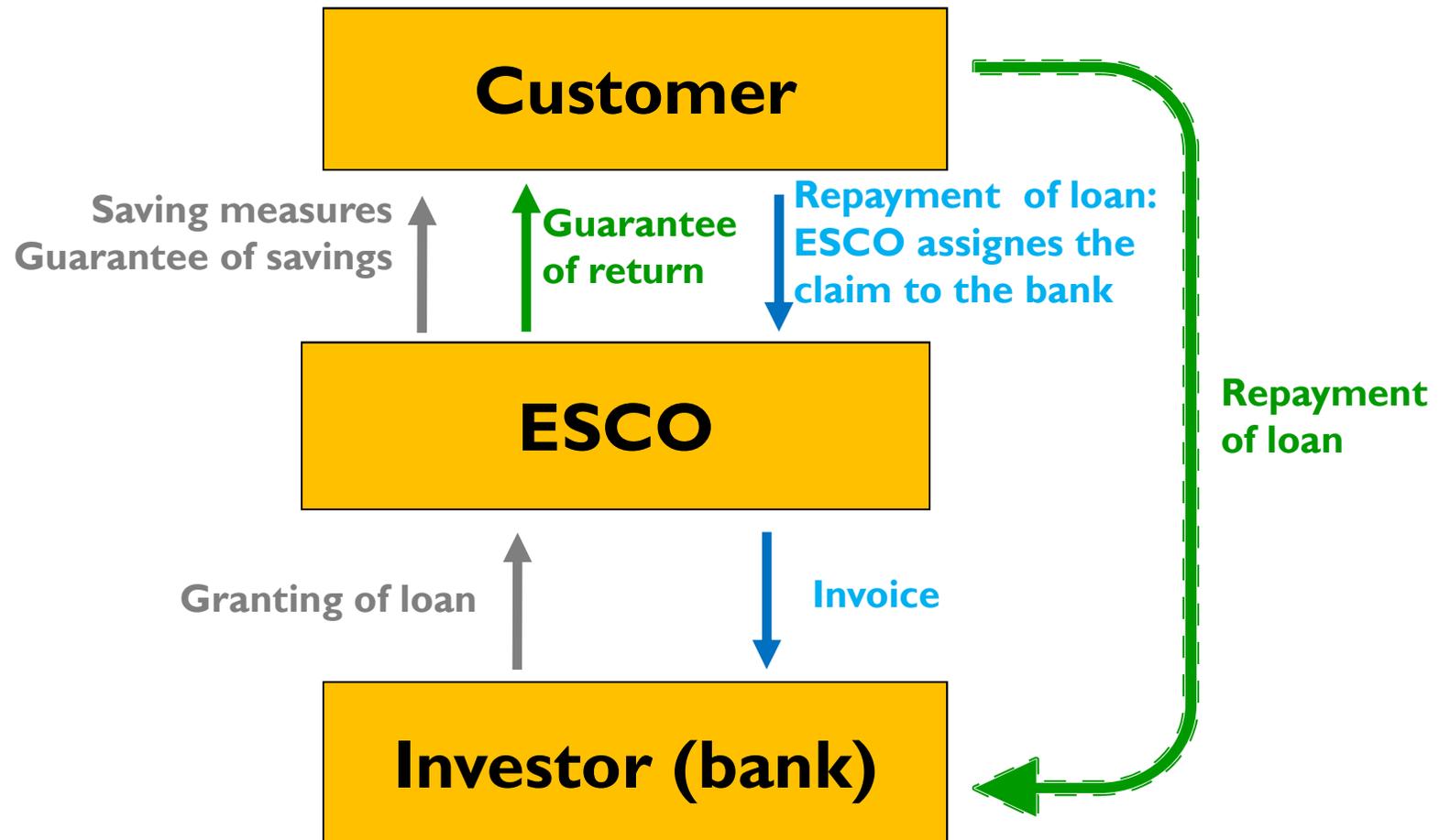
A.2 Third party financing/ customer's credit



A.3 Third party financing/ Assignment of claims

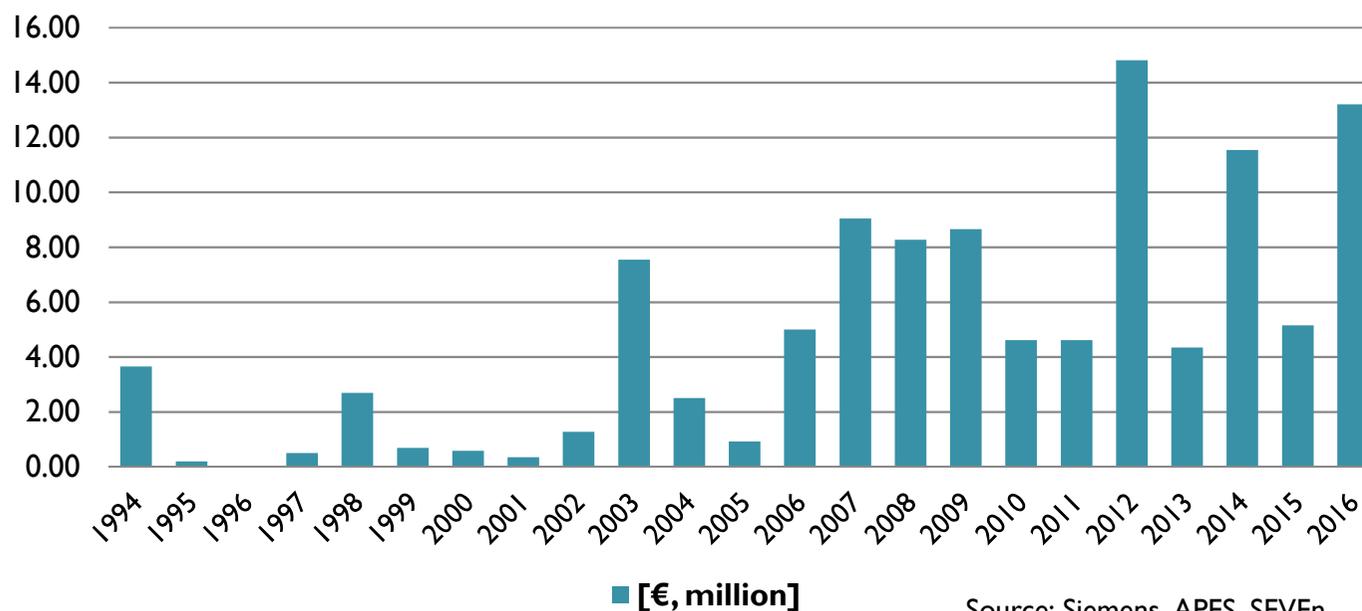
- The ESCO
 - takes the credit, i.e. ensures financing of the EPC project in its own name
 - when all energy saving measures are installed ESCO issues the invoice to the client and subsequently assigns the claim to the bank
 - bears the whole risk of the project failure concerning any energy saving technology
 - assignment of claims protects ESCO from bearing risk of bankruptcy of the client
 - assignment of claims releases the debt from ESCO's book
- The customer
 - does not meet with the source of financing (usually a bank) but has to send repayments of loan directly to the bank

A.3 Third party financing/ Assignment of claims



Development of EPC market (guaranteed energy savings) in the Czech Republic (1994 – 2016)

EE Investment delivered by EPC providers in the CR



Source: Siemens, APES, SEVEn

The main features of the Czech EPC market

- Assignment of claims
- Combination of financial sources in building insulation projects with technology improvements
- Standardized competitive bidding procedure
- Facilitators (advisory) in preparatory stage



Combination of financial sources and EPC

- Payback of EPC projects should not exceed 10 – 12 years
- The payback of building insulation projects lasts usually much longer (15 to 40 years)
- The project is broken down into two parts using different approaches:
 - **construction measures** (insulation, window replacement)
financed from long-term sources or from subsidy programs (e.g. EU Operational or National programmes + co-financing sources provided by the client)
 - **technology improvement – energy saving measures**
EPC model is used (when the buildings are suitable for the EPC),
subsequently commercial loans are incorporated or another standard practice
- Both the financial sources are usually involved in competitive bidding procedure: ESCO can include/influence all the building reconstruction in its EPC project and thus take over responsibility for overall savings.

Project Example: Financing of School Renovation (City of Prague, the District 13)

Energy savings reached by implementing new technology and building insulation in 15 schools (2010)

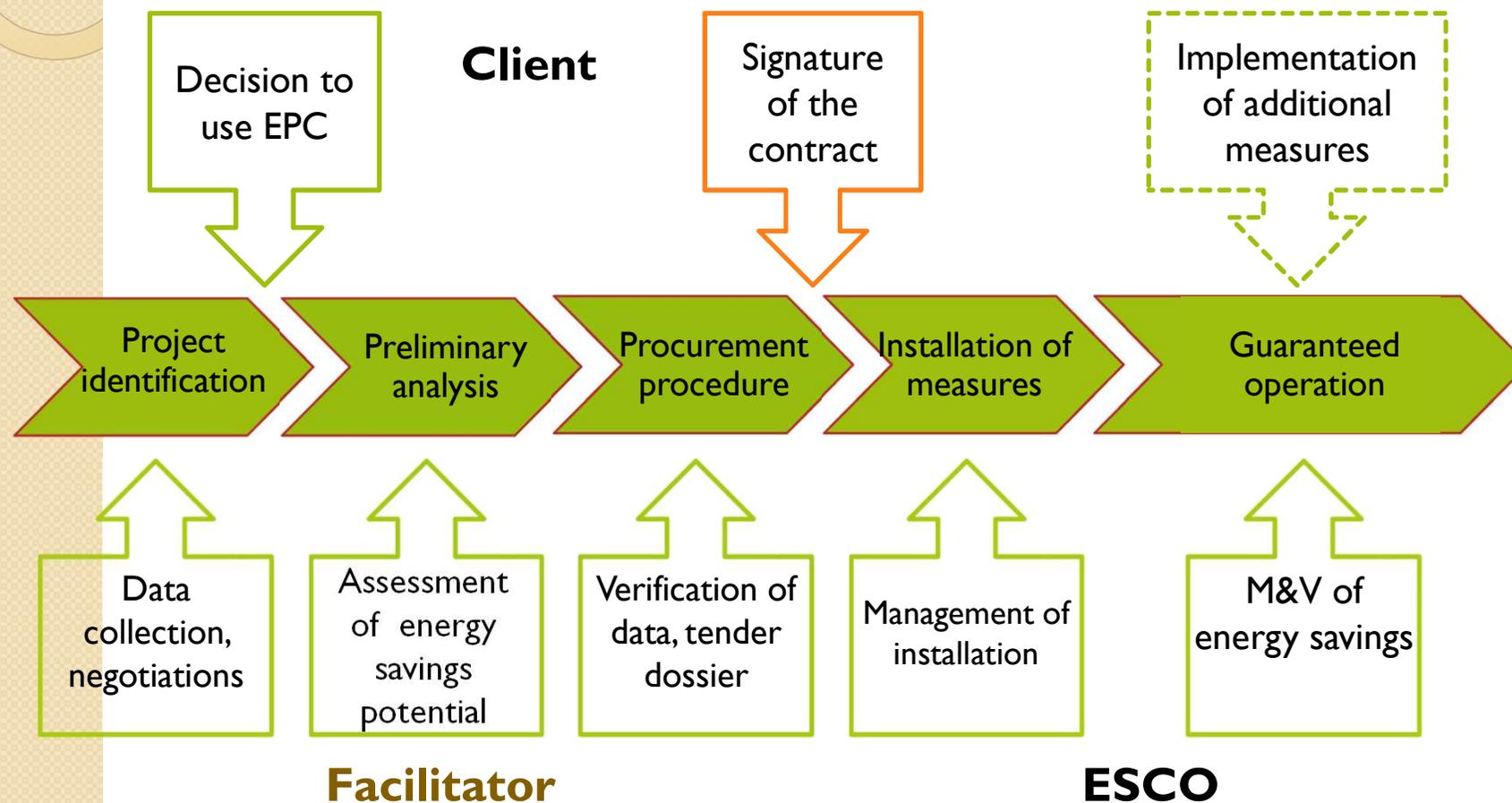


- **Technology equipment reconstruction using EPC contract**
 - New boiler houses, IRC temperature control, hot water exchangers, water savers, etc.
 - **Investment € 4 million**

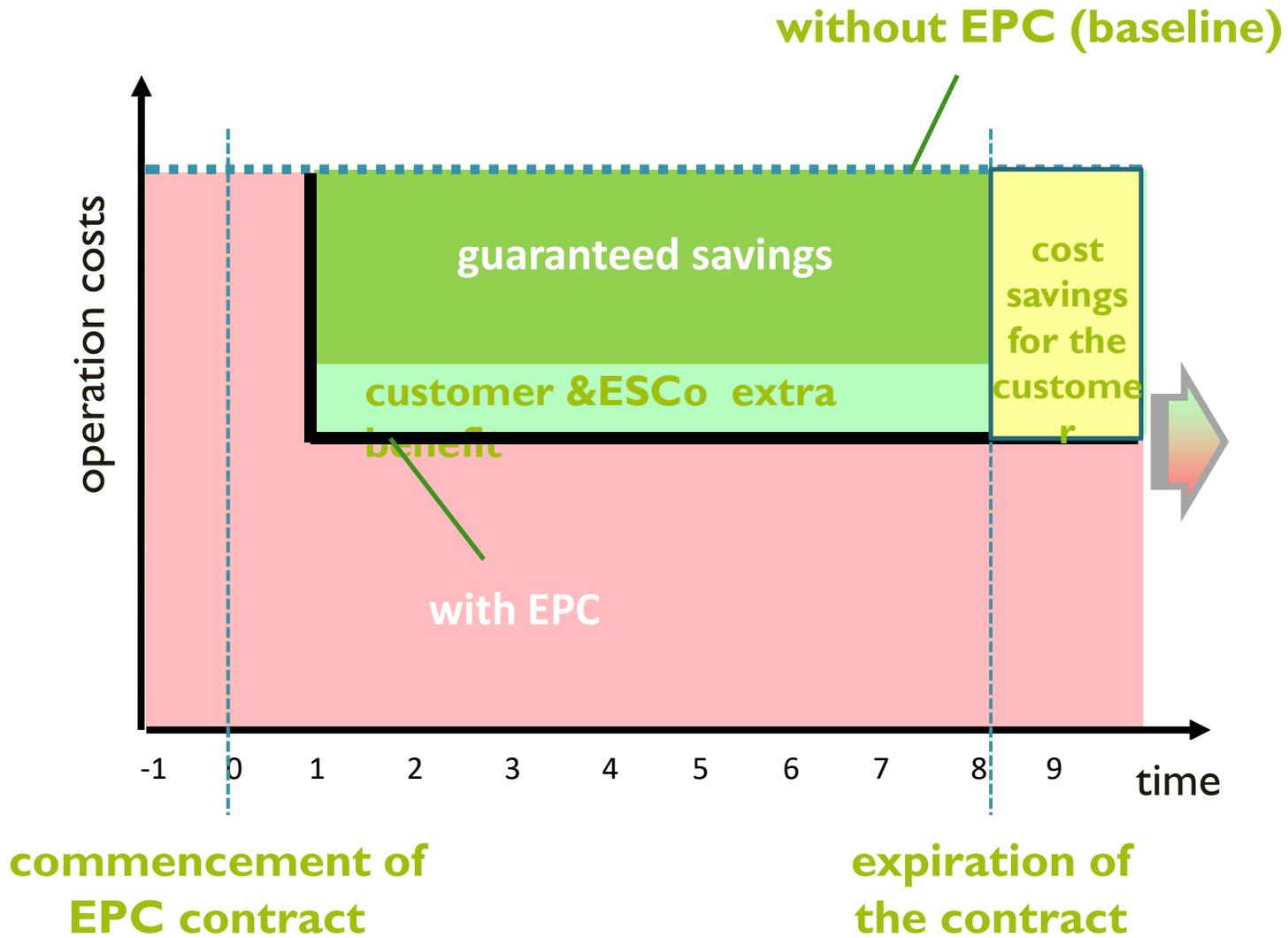
100% paid from savings in future operating costs - EPC
- **Building envelopes**
 - Insulation + windows replacement
 - **Investment € 18 million**

*52% co-financed from EU structural funds
48% paid by the city*

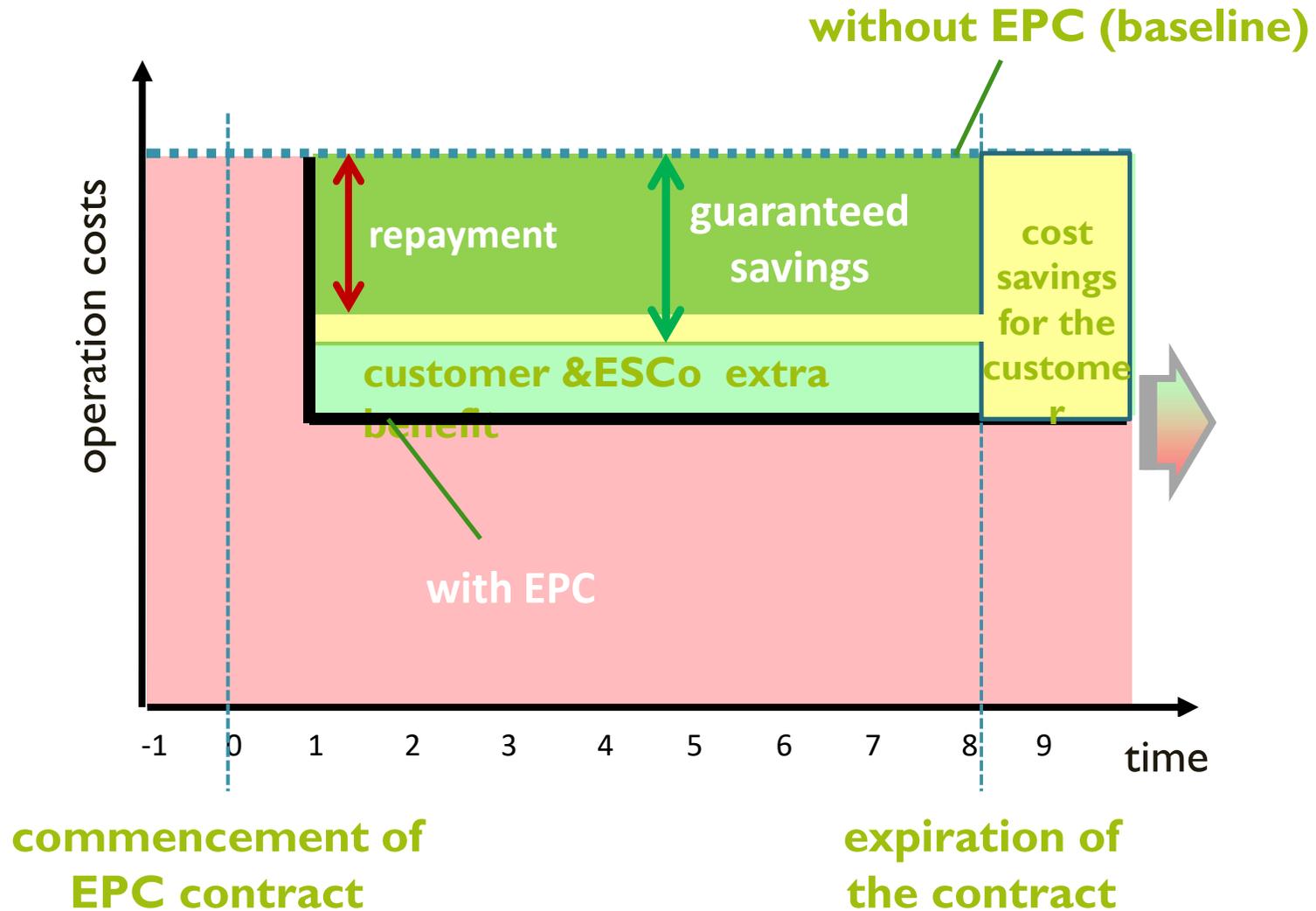
Competitive bidding procedure



Competitive bidding: Standard EPC financial scheme

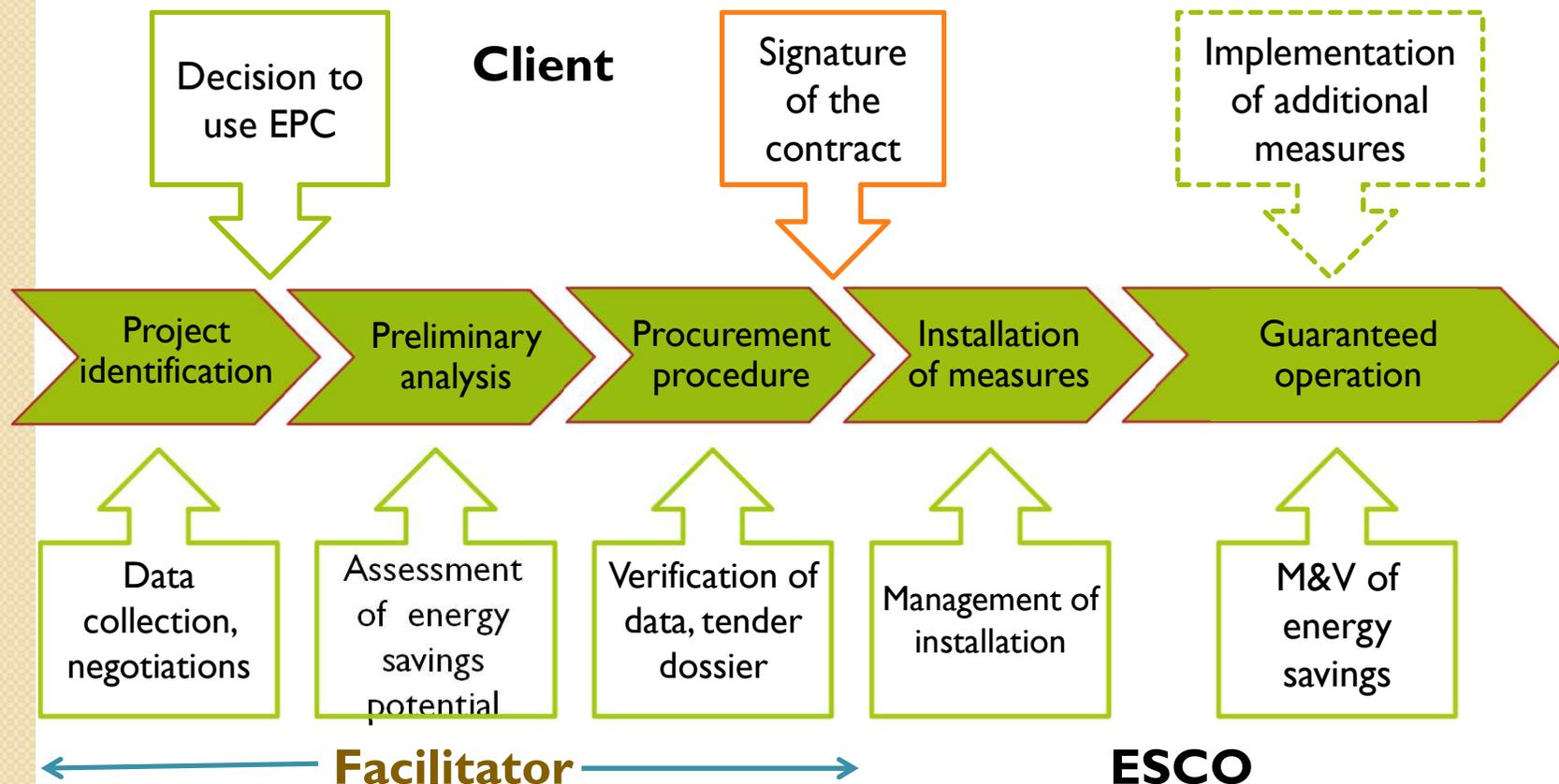


Competitive bidding: EPC financial scheme with a new extra benefit dedicated to the client



Facilitating EPC projects in public sector

Facilitators can manage all the tendering procedure for a client. Their involvement increases the quality and effectiveness of EPC projects. In addition this approach ensures compliance with the public tender legislation.



CombinES project (2012-14)



- Two types of EE measures can be implemented in the buildings:
 - construction measures (insulation, window replacement)
payback time is at least 15 years; in the most cases longer (the investment costs cannot be paid back only by savings on operating costs)
 - technological measures (renovation of energy systems)
payback time is usually 4-8 years (the investment cost can be often repaid purely by the savings)
- Simple insulation is not sufficient to ensure optimum volume of savings - it should be complemented with technological upgrade of the heating system
- It is possible to combine construction measures with technological measures on the same site - adjusted to local conditions (in some countries the EPC part is better to be separated in a unique procurement procedure due to a different approach to evaluation of the tenders)
- CombinES project co-financed by the Central Europe Programme

Transparensen project (2013-2015)

- Partners: 20 European countries
- Coordinator – SEVEn (CZ)
- aimed to increase the transparency & trust in European EPC markets:
 - EPC markets survey & analysis and results dissemination
 - European Code of Conduct for EPC with 225 signatories including two European and 12 national associations of EPC providers
 - International transfer of know-how, capacity building: 73 trainings with 1,61 attendees
- Co-financed by Intelligent Energy Europe Programme (EASME)



The guarantEE project



Key features:

- guarantEE fosters the use of Energy Performance Contracting in the public and private sector across Europe by especially
- developing innovative EPC solutions for rented facilities
- making EPC more flexible to better serve private sector clients
- supporting EPC pilot projects with experienced facilitators

- The guarantEE project is being funded by the European Union's Horizon 2020 research and innovation programme.

Arrangement:

- The 14 consortium partners of the guarantEE project are covering large parts of Europe in a mix of advanced and emerging ESCO markets.
- Project duration: 3 years
- Project website: <http://guarantee-project.eu/>
- Project website includes a database of EPC projects, developed within the previous EESI2020 project and extended in guarantEE.

EPC+ project (2015 - 2018)



- Creation of **SME Partnerships** for Innovative Energy Services (SPINS) = network of SMEs offering jointly tailored EPC
- **Training courses** and materials for SPIN
- **Tools:** Organisational and Technical toolbox's and modular contracts
- Supporting **pilot projects**
- **Dissemination of information**
- **Energy Efficiency Network Europe** - international platform to support collaborative networks and innovation: www.energyefficiencynetwork.eu
- Co-financed by Horizon2020 Programme (EASME)



The Czech EPC Market – A Brief Review of Special Issues

- Financial mechanism based on **assignment of claims** accelerates the growth of ESCO market by
 - reducing risk for ESCOs while all savings guaranties remain in force
 - releasing the long-term debts from ESCOs accounting books
 - opening ESCO market to SMEs
- **Competitive bidding** has been developed into a standardized procedure, which increases the quality of EPC projects for clients
- **Facilitating** has become an indispensable part of EPC projects in public sector
- Projects comprising both the technology improvements and insulation of envelope are financed from two different sources, which can be **combined** into one competitive bidding procedure.
- Most of EPC projects are based on the **constant energy prices**. As a consequence, energy service providers focus more on technologies and less on fluctuation of prices.
- European **Code of conduct for Energy Performance Contracting** has been widely used and complies with the actual practice in the country

Thank you for your kind attention

jaroslav.marousek@svn.cz

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