Block 4: Financing of energy efficiency projects
4.1 Financial sources in general

D.T4.4.1 e-learning course

FEEDSCHOOLS, by HEP ESCO

BLOCK 4: FINANCING OF ENERGY EFFICIENCY PROJECTS

This block is part of a training package developed to provide local authorities with free tuition that may inspire and help them in adopting new technical and financial solutions to implement ‘nearly Zero Energy Building’ (NZEB) renovation activities in schools.

After an Overview of possible financial sources for EE projects, this block will introduce Financial sources for EE projects, Comparative analysis of possible financial sources and Available and acceptable financing shemes (Country analysis).

Beginner: No special knowledge is needed

Learning Objective:

At the end of this block attendees will be provided with basic concepts to understand the issue of Financial sources for EE projects, Comparative analysis of possible financial sources and Country analysis.

4.1	4.1.1	4.1.2	4.1.3	4.1.4
Financial sources in general	Overview of possible financial sources for EE projects	Comparative analysis of possible financial sources	Conclusion	Self assessment test

4.1
Financial sources in general

4.1 Objective

After an Overview of possible financial sources for EE projects, this block will introduce Financial sources for EE projects, Comparative analysis of possible financial sources and Available and acceptable financing shemes (Country analysis)

Own (budget) financing

- Traditional financing of projects in cities and municipalities relies dominantly on the use of own budget
- Challenges:
  - insufficient revenue base with which to fund projects
  - dependence on revenue transfers from regional or national governments (risk)
- This introduces further uncertainties and makes commitment to multi-year programs of capital expenditures more difficult

Credit (loan) financing

- National governments often impose limits on borrowing by municipalities to prevent them getting into financial difficulties and lead to uncontrolled increase of the public debt – > debt limitations
    - EE projects are not typical capital expenditure projects that can be readily assessed and approved by higher authorities
    - EE projects, with relatively low public profiles, are likely to have a lower priority than other pressing or mandated needs
- Soft loans are dedicated credit lines for EE measures extended to end users at preferential terms in terms of maturity and/or interest rates - often provided by national or international development banks (e.g. EIB, EBRD) and further distributed to designated markets through regional partner retail banks

.

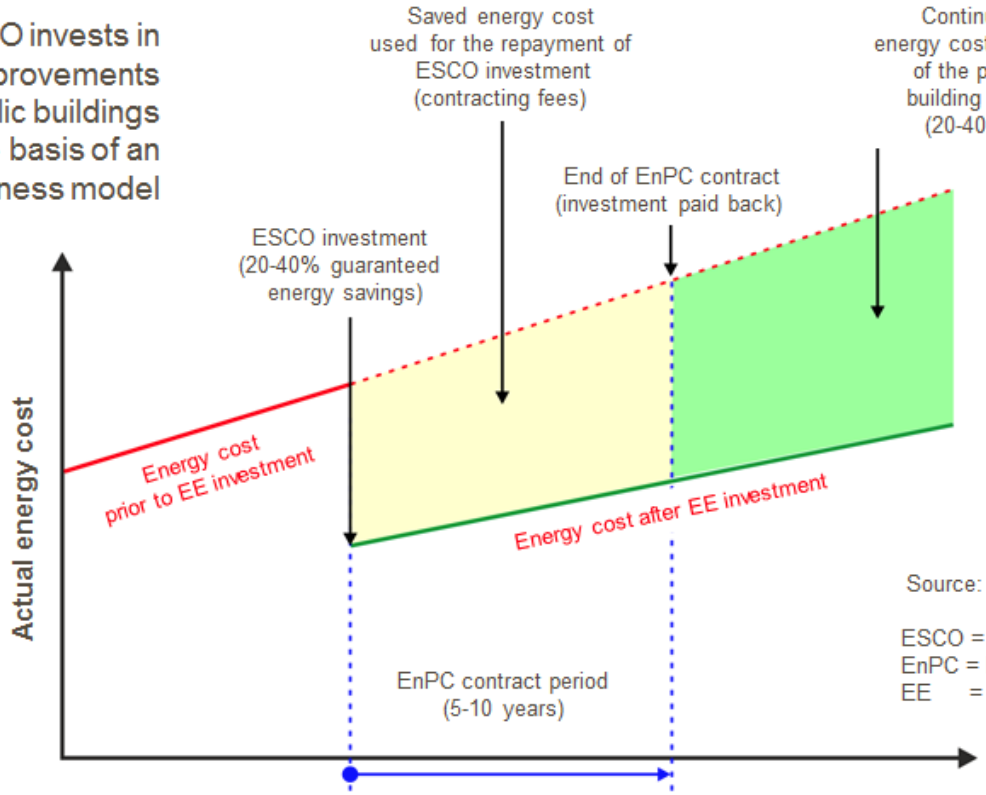
ESCO model

- ESCOs are companies that work on a basis of energy performance contracts
- ESCO is responsible for **optimizing building services systems and system operations in existing buildings across all branches of construction and maintenance**
- ESCO is a guarantees level of savings over a defined period
- Before a tender is made, an energy cost baseline is determined for facility
- Proceeding from the energy cost baseline, the ESCO guarantees an annual energy cost savings (in EUR, calculated on a fixed price basis with the energy prices of the reference year) to the customer over the entire contract period
- A fixed proportion of these guaranteed savings is set as the contracting fee, which the ESCO receives from the client to finance the investment. Usually, the fee is set lower that the guaranteed saving in order for client to immediately benefit from savings.

ESCO model

Energy Performance Contracting (EnPC)

ESCO invests in EE improvements of public buildings on the basis of an EnPC business model



Source: GIZ

ESCO = Energy Service Company
EnPC = Energy Performance Contracting
EE = Energy efficiency

PPP model

A Public-Private Partnership (PPP) arrangement the public and private sectors collaborate to deliver public infrastructure projects (e.g. roads, railways, hospitals) which typically share the following features:

- a long-term contract between a public procuring authority and a private sector company based on the procurement of services, not assets;
- the transfer of certain project risks to the private sector, notably with regard to designing, building, operating and/or financing the project;
- a focus on the specification of project outputs rather than project inputs, taking account of the whole life cycle implications for the project;
- the application of private financing (often “project finance”) to underpin the risks transferred to the private sector; and
- payments to the private sector which reflect the services delivered. The PPP Company may be paid either by users through user charges (e.g. motorway tolls), by the Authority (e.g. availability payments, shadow tolls) or by a combination of both (e.g. low user charges together with public operating subsidies).

PPP arrangements are complex, require detailed project preparation and planning, proper management of the procurement phase, etc.

Subsidies (grants)

- Most of available grant schemes are based on the use of European Unison structural and investment funds (ESI)
- EE projects in buildings belong to projects that generate net income after completion, i.e. the energy cost savings of the project are treated as net income
- Under the preamble (paragraph 13) of the Delegated Regulation 480/2014, as well as under recital (paragraph 58) of Regulation 1303/2013 of the EU, it is necessary to accurately calculate net income to ensure the efficient use of Union funds and to avoid over-financing of projects
- Co-financing is determined based on calculation of financing gap
- Financing gap is generated in energy efficiency projects when the investment in energy efficiency cannot be paid off from savings on energy costs

Combinations thereof

- Usually, EE projects in public buildings combine two financing models
- Dominantly, grants (if available) are combined with own financing
- Recently, with the availability of EU structural and investment funds for energy efficiency across the MS, the blending of such funds with other financing models becomes increasingly interesting

  - the blending refers to combination of EU grants with other financing mechanism such as loans or ESCO/PPP model

4.1.2 COMPARATIVE ANALYSIS OF POSSIBLE FINANCIAL SOURCES

Criteria/ Model	Own financing	Loan financing	Grants	ESCO model	PPP model
Neutral impact on government debt					
Administrative procedure complexity					
Guarantee of savings / service standard					
Capacities and capabilities of the public bodies to implement the model					
Estimated multiplier effect					
Projects for which the model is appropriate	Simple EE measures with short pay-back periods	Simpler EE measures with shorter pay-back periods	More complex projects, with longer pay-back periods	Highly complex projects, with moderate pay-back periods (up to 10 years)	Highly complex projects, usually with new buildings, long-term

Conclusion

- Various financing sources and models available and used for EE projects across the partner countries
- Planning of own budget, debt limitations and capacities of schools to implement EE projects are universal problems
- Through FEEDSCHOOLS project, a calculation tool to demonstrate pros and cons of each financing model developed and tested based on inputs from energy audits

  - **ESCO model in combination with grants turns out to be the optimal model for most analyzed schools**

Traditional financing of projects in cities and municipalities:

- ☐ Credit (loan) financing
- ☐ Own (budget) financing
- ☐ Subsidies (grants)

ESCO companies:

- ☐ work on a basis of energy performance contracts
- ☐ provides credit lines for EE measures
- ☐ provide the transfer of certain project risks to the private sector

Public-Private Partnership:

- ☐ a combine two financing models
- ☐ the use of European Unison structural and investment funds
- ☐ the public and private sectors collaborate to deliver public infrastructure projects

ESCO model in combination with:

- ☐ grants turns out to be the optimal model for most schools
- ☐ credit turns out to be the optimal model for most schools
- ☐ own budget turns out to be the optimal model for most schools

SELECTED RESOURCES

- https://www.hbor.hr/en/kreditni_program/public-sector-investment/#contacts

  This website provides informations about Credit (loan) financing for Public sector business entities

- http://www.hep.hr/esco/esco-projects/esco-concept/1464

  This website provides informations about ESCO Concept

- https://ec.europa.eu/regional_policy/en/policy/what/glossary/e/esif

  This website provides informations about European Structural and Investment Funds (ESIF)

- http://www.hep.hr/esco/energy-services/eu-projects/feedschools/1863

  This website provides informations about EU Project FEEDSCHOOLS

Goran Hanžek, HEP-ESCO,Croatia (Author and Tutor)

www.hep.hr/esco

goran.hanzek@hep.hr

+385 1 6321471

facebook.com/feedschools

linkedin.com/in/feedschools

twitter.com/feedschools