Sustainable financing models of nZEB through the TEESCHOOLS project

TEESCHOOLS PROJECT
REGIONAL WORKSHOP/SPLIT]
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Title of the presentation:
Sustainable financing models of nZEB through the TEESCHOOLS project

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Content of presentation

- Aim of TEESCHOOL analysis
- Overview of financing models for EE projects
- Results of analisys per country
- Conclusion

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Aim of TEESCHOOL analysis

- Energy renovation is costly, energy renovation to nZEB standard is even more costly
- Schools have limited budgets and capacities to implement energy renovation projects in schools
- The aim of analysis was to investigate situation in participating countries related to:
  - Availability of financing schemes for EE projects in schools
  - Preferred financing models for EE projects in schools
  - Persisting barriers to implementation of EE projects in schools

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Financing models for EE projects

1. Own (budget) financing
2. Credit (loan) financing
3. ESCO model
4. PPP model
5. Subsidies (grants)

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Own (budget) financing

- Traditional financing of projects in cities and municipalities relies dominantly on the use of own budget.
- One of the financing challenges facing municipalities, more often for smaller municipalities rather than larger ones is the insufficient revenue base with which to fund projects (not only EE projects, but also other development projects as well). An insufficient revenue base, which may be the result of a small number of tax-paying commercial businesses and/or high-income residents, can reduce the availability of adequate funds for capital investments.
- Municipalities depending on revenue transfers from regional or national governments often have limited revenue-raising powers. Such limitations imply that any decision to invest in an EE project either requires the municipality to reallocate funds or convince higher levels of government that the EE project is economically viable. This may often not be a simple task.
- Reliance on transfers from other levels of government also exposes municipalities to the risk that permitted levels and uses of funds may be affected by changes in national budgetary or political priorities. This introduces further uncertainties and makes commitment to multi-year programs of capital expenditures more difficult.

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Credit (loan) financing

- National governments often impose limits on borrowing by municipalities to prevent them getting into financial difficulties. These restrictions may take the form of limits on the use of loan funds and/or on the total amount that municipalities may borrow. In both cases, EE projects are likely to lose out, because they are not typical capital expenditure projects that can be readily assessed and approved by higher authorities. In addition, when debt ceilings are in place, 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. Such credit lines are often provided by national or international development banks (such as European Investment Bank (EIB) and European Bank for Reconstruction and Development (EBRD) and are further distributed to designated markets through regional partner retail banks.

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ESCO model

- ESCOs are companies that work on a basis of energy performance contracts (EPC). In an energy EPC arrangement, the ESCO is responsible for **optimizing building services systems and system operations in existing buildings across all branches of construction and maintenance.** The main service provided by the ESCO is a guaranteed level of savings over a defined period.
- Before a tender is made, an energy cost baseline is determined for the building (or building pool) or facility. This is usually based on the energy consumption of the calendar year prior to commencement of the EPC, which is often also compared to the two preceding years in order to eliminate extreme climatic influences, usage fluctuations, etc. The evaluated baseline data is climate adjusted on the basis of mild or hot days (annual degree days). 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, maintain the installations and attain a profit margin. Usually, the fee is set lower that the guaranteed saving in order for client to immediately benefit from savings.

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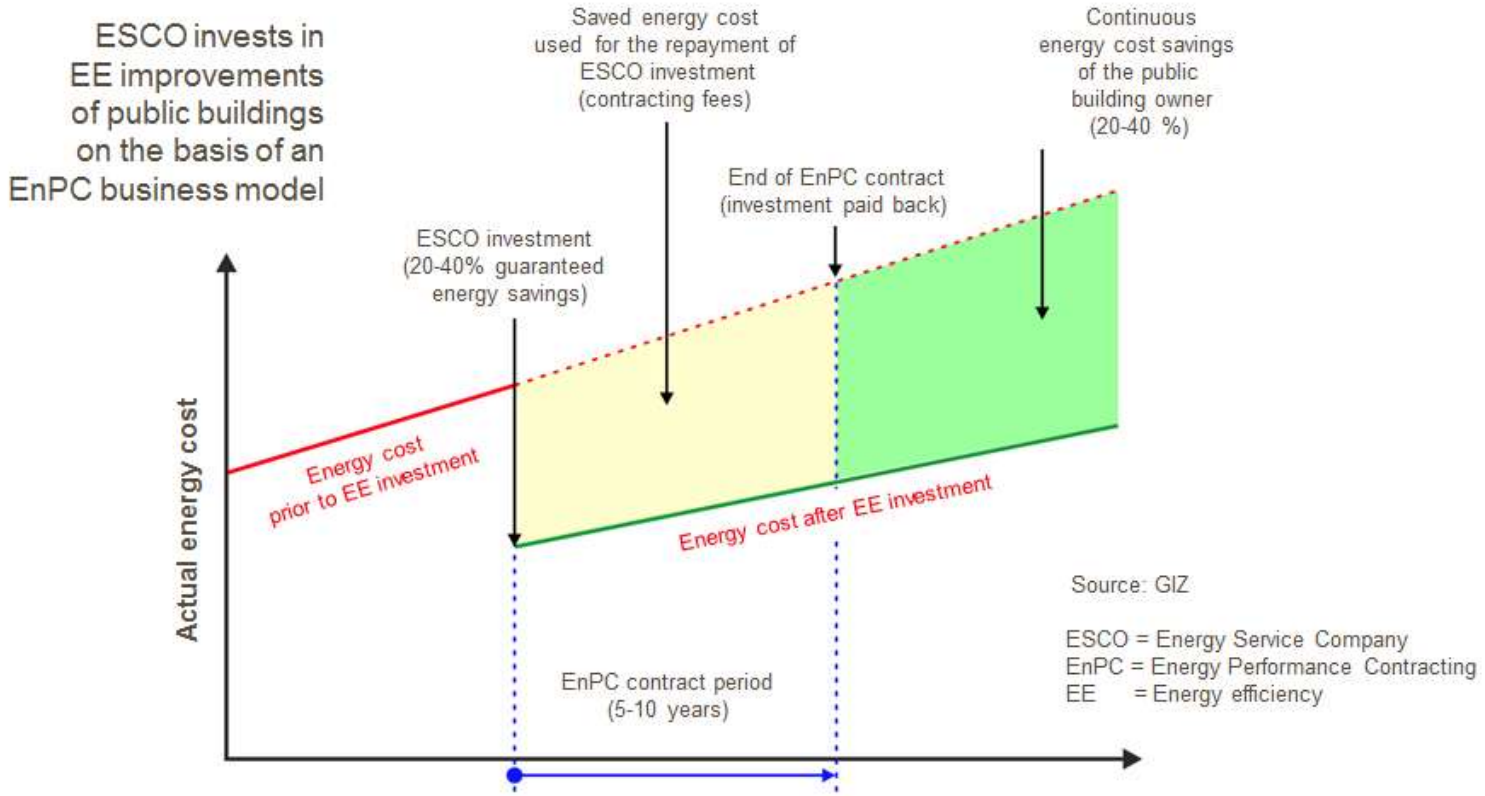
ESCO model

Energy Performance Contracting (EnPC)



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ESCO model

„Quasi" ESCO	EPC
Delivery of EE project (equipment and works)	Delivery of energy service
After implementation assets are transfered in public partner's books	After implementation assets remain in books of service provider
One invoice, repayment through payouts	Successive periodic (monthly) invoices, increased for VAT
It represents the indebtedness of public partner (investment costs)	Does not represents the indebtedness of public partner (operating costs)
Risks are divided	Risks are on the side of the service provider
Maintenance and insurance are obligation of public partner	Maintenance and insurance are obligation of the service provider
Projected (contracted) savings	Guaranteed (measured and verified) savings
There is no penalties mechanism in case of non-achievement of contracted savings	There is penalties mechanism in case of non-achievement of contracted savings

ESCO model

- In the 5th month of 2018, Eurostat announces a long-awaited guide: A Guide to the Statistical Treatment of Energy Performance Contracts http://www.eib.org/attachments/pj/guide_to_statistical_treatment_of_epcs_en.pdf
- Detailed description of all aspects of the EPC contract and its effects:
  - Legal ownership and access rights
  - Specification, design, construction and installation of the EPC assets
  - Maintenance and operation of the EPC assets
  - The Guaranteed Savings
  - The payment mechanism
  - Compensation, relief and force majeure events
  - Changes to the EPC
  - Changes in law
  - Insurance
  - Warranties and indemnities
  - Early termination of the EPC
  - Compensation on early termination of the EPC
  - Expiry of the EPC
  - Financing arrangements
  - Government influence

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PPP model

- A Public-Private Partnership (PPP) arrangement differs from conventional public procurement in several respects. In a 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 (the “Authority”) and a private sector company (the “PPP 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).

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PPP model

- The rationale for using a PPP arrangement instead of conventional public procurement rests on the proposition that optimal risk sharing with the private partner delivers better “value for money” for the public sector and ultimately the end user.
- PPP arrangements are more complex than conventional public procurement. They require detailed project preparation and planning, proper management of the procurement phase to incentivise competition among bidders. They also require careful contract design to set service standards, allocate risks and reach an acceptable balance between commercial risks and returns. These features require skills in the public sector which are not typically called for in conventional procurement.

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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. Determining the share of co-financing by the Union should reflect the rule of non-profit - grants must not result in earning a profit. If they are profitable, it is necessary to conduct a financial analysis to determine the financing gap, the assessment of the need for grant and the amount of potential grants. Therefore, the purpose of co-financing through grants is to close the financing gap that is generated in energy efficiency projects when the investment in energy efficiency cannot be paid off from savings on energy costs. GUIDANCE FOR BENEFICIARIES of European Structural and Investment Funds and related EU instruments, EC, 2014 (http://ec.europa.eu/regional_policy/sources/docgener/guides/synergy/synergies_beneficiaries.pdf)

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Overview of financing models for EE projects

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

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Questionnaire results per country – available& acceptable financing schemes

Country	Criteria/ Model	Own financing	Loan financing	Grants	ESCO model	PPP model
B&H	Availability	√	√	√	√	-
	Acceptability	√	√	√	√	-
Croatia	Availability	√	√	√	√	-
	Acceptability	√	-	√	√	-
Cyprus	Availability	√	√	√	√	-
	Acceptability	√	√	√ (if grant scheme for public sector is to be established)	√	-
France	Availability	-	√	√	-	-
	Acceptability	√ (only if planned as priority)	√	√ (if available)	-	-
Greece	Availability	-	√	√	√	-
	Acceptability	√	√	√	-	-
Italy	Availability	√	-	√	√	√
	Acceptability	√	-	√	~ (only if model is further developed)	-
Spain	Availability	√	√	√	√	-
	Acceptability	√	-	√	-	-

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Questionnaire results per country – preferred financing models

Criteria/ Model	Own financing	Loan financing		Grants	ESCO model	PPP model
		Interest rate %	Duration year	Grant rate %		
B&H	√	1.25	10	40	20%	
Croatia	√			45	20%	
Cyprus	√	3.00 -5.00	7 - 10	n/a (up to 50% based on similar schemes)		
France	√	< 1.00	5 - 7	n/a		
Greece	√	3.00 -5.00	5 - 7	100		
Italy	√			65	20%	
Spain	√			100		

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Questionnaire results per country – persisting barriers to implementation of EE projects in schools

- Administrative and legal barriers:
  - *lack of **construction permits** and other documents that are required for application for grants as well as **unsolved land registry and ownership issues**; lack of **technical expertise and data**; **complicated procedures** for obtaining grants; many schools are under **architectural heritage protection**; **no specific environmental requirements** for renovation of existing buildings (unlike for construction of new buildings)*
- Financial barriers
  - ***irregular offer of grants**; **insufficient pre-planned budget** for implementation of EE measures; procedures for loans for ESCO model are too **time consuming**; **debt limitations** of local public authorities, which are the owners of schools*
- Accounting barriers
  - ***no system for energy data and bills collection**; the latest **Eurostat guidelines** on accounting if Energy Performance Contracting has not been transferred yet to national legislative framework; **public procurement legislation** does not provide clear guidelines for EE projects based on ESCO model*

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Conclusion

- Various financing models available and used for EE projects
- No strict nZEB standards for energy renovation
- Planning of own budget, debt limitations and capacities of schools to implement EE projects are universal problems
- Through TEESCHOOLS project calculation tool to demonstrate pros and cons of each financing model developed and tested based on inputs from energy audits

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Thanks for your attention!

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