

MEDNICE

MED programme Network for an Innovative Cooperation Energy Efficiency

D. 4.3.1 Technical paper and lessons learned report – MED financing schemes and barriers



EFFICIENT BUILDINGS

**IMPROVING ENERGY EFFICIENCY
CAPACITIES IN PUBLIC BUILDINGS**

Project co-financed by the European
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Catalonia Institute for Energy Research

Task 4.3: Analysis and harmonization

Deliverable D. 4.3.1 Technical paper and lessons learned report – MED financing schemes and barriers

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Disclaimer

This report considers the Modular Project deliverables available on-line up to October 2018.

TABLE OF CONTENTS

INTRODUCTION	7
1. FINANCING BARRIERS TO ENERGY EFFICIENCY	9
1.1. WORKSHOP WITH STAKEHOLDERS	9
1.2. SURVEY TO PUBLIC BUILDING OWNERS, FINANCIAL INSTITUTIONS AND THIRD-PARTY INVESTORS	10
1.3. EXPERIENCE FROM PRACTICAL EXAMPLES	12
2. STAKEHOLDERS	13
3. EXISTING FUNDING PROGRAMS AND FINANCIAL SCHEMES	15
3.1. FUNDING PROGRAMS AND FINANCIAL SCHEMES IN EU	15
3.1.1. EUROPEAN STRUCTURAL AND INVESTMENT FUND	15
3.1.2. EUROPEAN FUNDING PROGRAMMES	16
3.1.3. EUROPEAN PROJECT DEVELOPMENT ASSISTANCE FACILITIES	17
3.1.4. FINANCIAL INSTITUTION INSTRUMENTS	18
3.1.5. ENERGY SERVICE CONTRACTING	19
3.1.6. ALTERNATIVE FINANCING SCHEMES	22
3.2. FUNDING PROGRAMS AND FINANCIAL SCHEMES AT NATIONAL LEVEL	23
3.3. FUNDING PROGRAMS AND FINANCIAL SCHEMES AT REGIONAL LEVEL	25
3.4. FUNDING PROGRAMS AND FINANCIAL SCHEMES AT LOCAL LEVEL	25

3.5. OTHER FUNDING SCHEMES	26
4. BEST PRACTICES FOR FINANCING ENERGY EFFICIENCY	28
4.1. CASE STUDIES	28
4.2. DISSEMINATION MATERIAL	33
CONCLUSIONS	34
REFERENCES	37

List of Abbreviations

CF – Cohesion Fund

CHP – Combined Heat and Power

CMCC – Euro-Mediterranean Center on Climate Change Fundation

DEEP - Debt for Energy Efficiency Projects

EE – Energy Efficiency

EEB – Energy Efficient Building

EED – Energy Efficiency Directive

EEEF - European Energy Efficiency Fund

EFSI – European Fund for Strategic Investments

EIB – European investment Bank

ELENA - European Local Energy Assistance

EMUNI – Euro-Mediterranean University

ENERJ – Joint Actions for Energy Efficiency

EPBD – Energy Performance of Buildings Directive

EPC – Energy Performance Contract

EPEEF - Environmental Protection and Energy Efficiency Fund

ERDF - European Regional and Development Fund

ESC - Energy Supply Contracting

ESCO – Energy Service Company

ESIF - European Structural and Investment Fund

FIDAE – Energy Saving and Diversification Investment Fund

HBOR – Croatian Bank for Reconstruction and Development

IDAE – Institute for the Diversification and Saving of Energy

IPA – Instrument for Pre-Accession Assistance

IREC – Catalonia Institute for Energy Research

IRR - Internal Rate of Return

JASPERS – Joint Assistance to Support Projects in European Regions

KfW – Kreditanstalt für Wiederaufbau

LIFE – Financial Instrument for the Environment

MP – Modular Project

MS – Member State

PA – Public Authority

PB – Public Buildings

PF4EE – Private Finance for Energy Efficiency

PPP – Public-Private Partnership

PV – Photovoltaics

RE – Renewable Energy

RES – Renewable Energy Sources

RNA – Region of North Aegean

SISMA – Supporting Innovative Schemes in the Med Area

SME – Small and Medium-sized Enterprise

STEPPING – Supporting the EPC Public Procurement IN Going-beyond

UIA - Urban Innovation Action

INTRODUCTION

Nearly 40% of final energy consumption in Europe is in houses, offices, shops and other buildings, therefore buildings are a priority for Energy Efficiency (EE) policy. Moreover, there are also important co-benefits from making buildings more energy efficient, including job creation, fuel poverty alleviation, health improvements, improved energy security and better industrial competitiveness.

While the Energy Performance of Buildings Directive (EPBD) sets minimum energy performance requirements for all buildings that undergo major renovation, Article 5 of the Energy Efficiency Directive (EED) sets a binding renovation target for public buildings (PBs) and imposes related obligations. It also stresses that governments shall undertake an exemplary role in the energy retrofit of their countries' building stock.

In this context, the MED Efficient Buildings Community, established by MEDNICE Project within the Interreg MED programme framework, was created precisely to support this transformation in PBs, specifically in the Mediterranean region. The community brings together local, regional and national stakeholders to exchanges methodologies, experiences and tools.

The Activity 4.3 “Convergence of EEB MED outputs through technical papers and lessons learned reports” (Analysis and harmonization) of MEDNICE Project aims to systematize knowledge from the ten EEB MED Modular Projects (MPs) (Figure 1) and to help find technical answers to common identified cross-cutting priority issues.

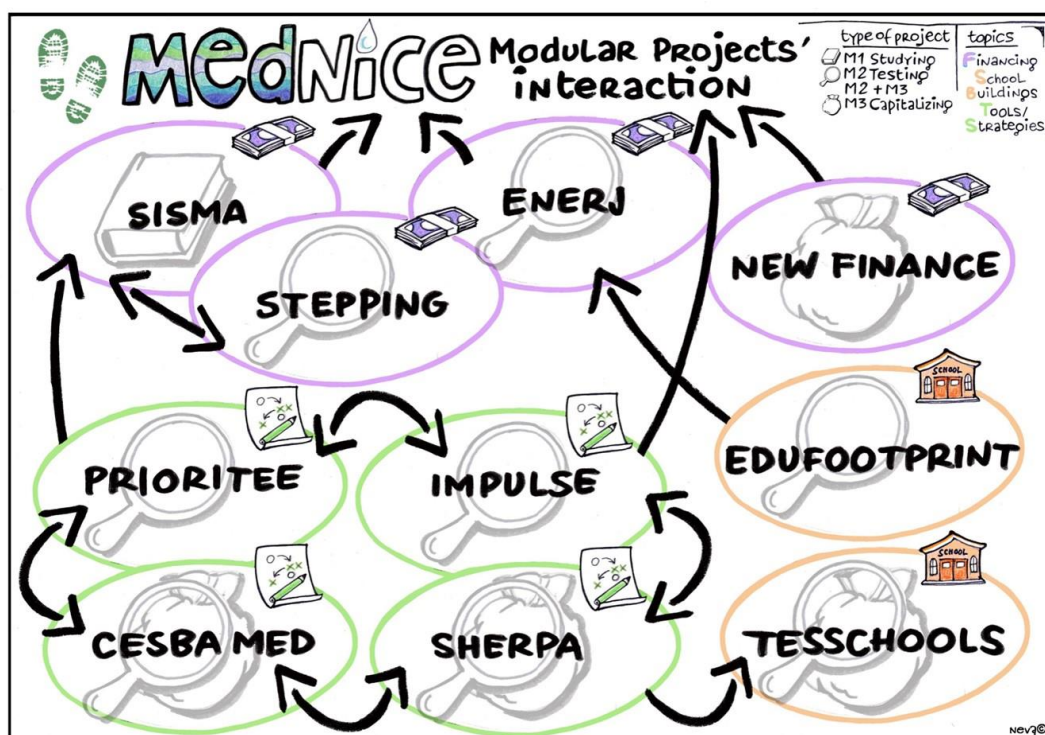


Figure 1. Modular Projects under the umbrella of MEDNICE Project (Source: MEDNICE Project)

In order to achieve the objectives of the Activity 4.3, it is foreseen the elaboration of several reports which will collect EE challenges and obstacles in the Mediterranean PBs and will provide solutions and identified gaps.

The present report (D. 4.3.1. Technical paper and lessons learned report- MED Financing Schemes and barriers) is focused on available schemes, good practices and existing barriers for financing EE in Mediterranean PBs.

Financing has been recognized as a transversal topic, nonetheless four out of the ten MPs have an explicit focus on the financial issue with the following main objectives:

- ENERJ (Joint Actions for Energy Efficiency): The project aims at improving the efficiency of policy tools and energy saving plans by studying and promoting new financial mechanisms (Energy Performance Contracting (EPC), green taxation, public-private partnership (PPP), etc.), in order to undertake Energy Saving measures and policies related to public/municipal buildings. (<https://enerj.interreg-med.eu>)
- NEW FINANCE (NEW FINANCE for energy efficiency measures in public buildings): The main objective of NEW FINANCE project is to increase the confidence of PB owners and private investors to overcome the barrier in financing EE measures at local and regional level and thus accelerate new investments in EE and Renewable Energy (RE) sources in PBs. (<https://new-finance.interreg-med.eu>)
- SISMA (Supporting Innovative Schemes in the Med Area): The main aim of the project is to foster the adoption of public/private innovative financial mechanisms to finance long-term payback EE investments in municipal PBs. (<https://sisma.interreg-med.eu>)
- STEPPING (Supporting the EPC Public Procurement IN Going-beyond): The purpose of STEPPING is to increase the adoption of EPC investment schemes in the elaboration of EE plans for public buildings in the MED area, raising the knowledge of MED institutions in designing, implementing and managing of EE plans for PBs. (<https://stepping.interreg-med.eu>)

1. Financing Barriers to Energy Efficiency

Financing EE projects for PBs is one of the biggest challenges in the Mediterranean area. Therefore, this matter has been explicitly addressed by several MED Programme projects under the specific objective of Efficient Buildings (Priority Axis 2: Low Carbon Economy).

In order to provide effective solutions to this issue, some projects identified and analyzed the most recurrent existing financing barriers through different methodologies: MEDNICE project implemented a workshop with relevant stakeholders; NEW FINANCE project implemented a survey to collect the barriers from three different perspectives: building owners, financial institutions and third party investors; while ENERJ project collected identified barriers from actors involved in 16 practical examples.

1.1. Workshop with stakeholders

In October 2017, MEDNICE organized the first Annual Congress in Nice (France), where the EEB Community was launched. The ten MPs under the umbrella of MEDNICE were present and invited around 70 representatives from Public Authorities (PA), financing and construction sector, business and research institutes to discuss about EE of PBs in the Mediterranean area.

One of the points of discussion during the event was the identification of existing barriers to drive the EE [1]. The participants classified the barriers in four main categories (information, cooperation/coordination, funding and legislation) and many of the main identified barriers highlight the difficulties of PA to finance EE in PBs:

- Information:
 - Lack of knowledge and awareness in local administration about how to develop EE renovation projects and how to use EPC schemes.
 - Difficulties on the collection of building data.
 - No PB typology classification available.
- Cooperation/coordination:
 - Political pressure.
 - Difficulties to manage and optimize the use of subsidies, and the need of financial models.
 - Difficulties in engaging and reaching PAs.
 - Lack of trust towards Energy Service Companies (ESCO), which are seen as a non-reliable partner.

- **Funding:**
 - Lack of funding due to lack of awareness by market players, including financial institutions.
 - Lack of incentives at national level to implement EE measures in public buildings.
 - High resources needed for a detailed energy characterization of all PBs.
- **Legislation:**
 - Lack of ambitious and easy-to-apply legislation.
 - Very different legislations with sometimes complicated and lengthy procedures and too much room for interpretation for local authorities.

1.2.Survey to Public Building owners, financial institutions and third-party investors

The NEW FINANCE Project implemented a market survey (NEW FINANCE D3.4.1) [2] in the six participating partner regions/countries (Bosnia Herzegovina, Croatia, Italy, Malta, Slovenia and Spain) targeting three specific interest groups: PBs' owners and managers, banks and third-party investors (i.e. ESCOs and Small and Medium-sized Enterprises (SMEs)). The survey collected 91 answers, of which about 50% from PBs' owners and managers, 25% from financial institutions and the remaining 25% from other third-party investors.

PBs owners and managers

From the perspective of PBs owners and managers, the survey basically identified and classified the main financing obstacles and barriers in two categories:

1) Dedicated loans for energy renovations

78% of respondents declare that they have not yet used dedicated loans for energy renovation due to: debt limitation of public sector (40%), the high interest rate by granting national loans (16%), and other unspecified reasons (22%) as indicated in Figure 2.

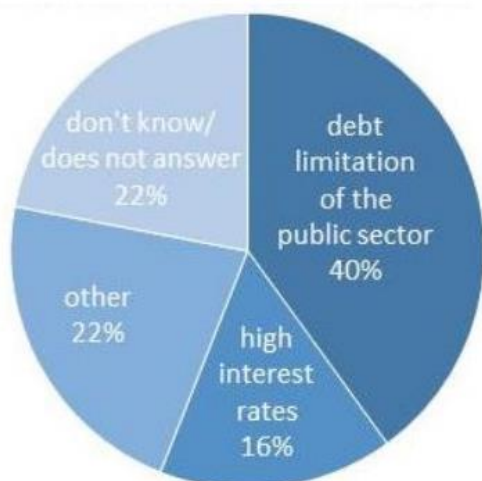


Figure 2. Obstacles to dedicated loans for energy renovation (Source: New Finance Project)

2) EPC/PPP contracts

As shown in Figure 3, public managers think that the main barrier is the lack of standardized procedures, followed by lack of a stable and defined national regulation for implementation of EPC/PPP, lack of internal know-how to develop and implement EPC/PPP contracts, lack of trust towards EPC/PPP and lack of ESCOs and SMEs with adequate financial capacity.

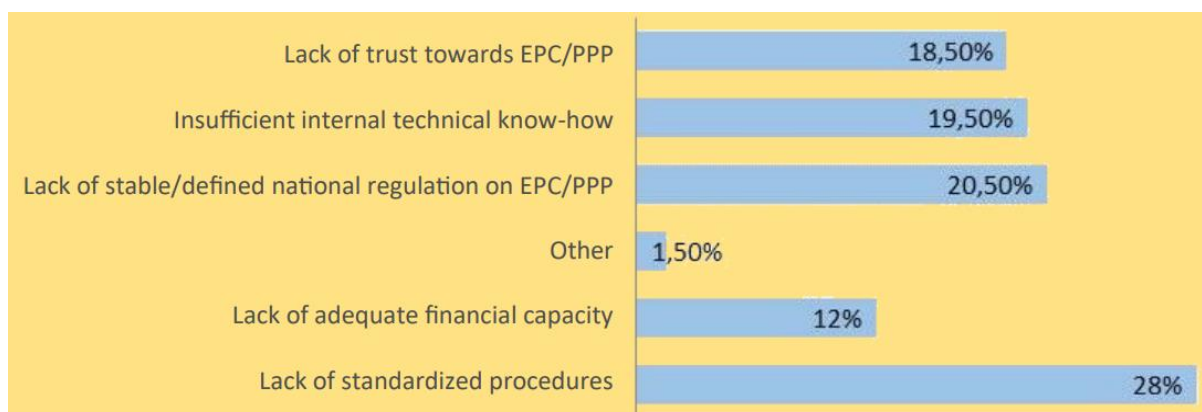


Figure 3. Main barriers and challenges related to the development and implementation of EPC/PPP (Source: New Finance Project)

Financial institutions

From the perspective of financial institutions, there is a low demand of dedicated loans requested by the public sector mainly due to public debt limitations and complexity of the requested procedures. Besides, financial institutions mentioned other issues like the scarcity of adequately structured ESCOs, small dimension of EE projects, technical complexity of EE projects, among others.

Third-Party Investors

Lastly, from the perspective of Third-Party Investors, “financing and allocation of risks” is considered main issue (57%), followed by “contract standardization” (52%) and “equity and guarantees” (48%)¹. Nevertheless, ESCOs highlight other issues like the lack of knowledge and technical ignorance of prior energy audit, lack of skills/ability/reliability of the ESCOs, lack of awareness on alternative financial modalities, lack of dedicated resources for the implementation of EE projects in PBs, among others. While the scale of priority risks according to the interviewed ESCOs is showed in Figure 4.



Figure 4. Main risks affecting ESCOs' projects implementation (Source: New Finance Project)

1.3.Experience from practical examples

From the point of view of ENERJ Project (ENERJ D3.1.1) [3], EE projects represent a challenge for local authorities, and projects can be not attractive for the current market. Therefore, the choice of the optimal financial scheme is crucial. Considering this issue, ENERJ describes three situations:

- a) The project is fully sustainable under market conditions. In this case, the priority should be given to PPP procedures, where private actors assume the responsibility.
- b) The project is partially sustainable under market conditions. In this circumstance, the PA should assess the availability of specific financial sources to support the project sustainability.
- c) The project is not sustainable under market conditions. In this situation, there are alternative solutions:
 - The PA's internal resources are sufficient to cover the whole investment.
 - Internal resources can cover only a part of the whole investment.

¹ Multiple choice was possible.

In case of self-financing, the public actor must consider factors like the priority assigned to the project, the cost-effectiveness and its urgency.

D3.1.1 [3] of ENERJ Project also shows 16 practical examples of EE projects in the PA, in which actors described encountered difficulties and barriers:

- Relation between different administration levels and conflicts in the loss of jurisdiction.
- Low financial autonomy of municipalities.
- Banks are reluctant to assume risks and they apply high interest rates.
- Equity funds are necessary in case of long pay-back periods.
- Low consolidation of specific technologies requires exhaustive technical and economic feasibility studies.
- ESCOs are reluctant to participate in tenders with technologies with long pay-back periods like building envelopes.
- Communication issues between ESCOs and building users.
- Need of external technical advisor when there is not enough experienced staff in public administration.
- Delays in the government approvals implies costs for ESCOs and construction companies.
- Difficulties in the collection of data and supporting material, such as technical drawings.

2. Stakeholders

The involvement and management of stakeholders is crucial to design and implement EE interventions in PBs. In relation to this point, the deliverable D.3.1.1 [3] of ENERJ Project proposes to map the stakeholders in three phases:

1. Identifying: listing relevant groups, organizations and people.
2. Analyzing: understanding stakeholders' perspective and interests.
3. Mapping and Prioritizing; visualizing stakeholders' relationships with the project objectives and other stakeholders & ranking stakeholders' relevance for identified issues.

For the identification and analysis, of the stakeholders, the document poses some specific questions, while for the mapping and prioritization, the elaboration of a matrix is proposed.

In Table 1, the six main categories of target groups identified within ENERJ project are shown, as well as their economic, environmental, social and political objectives, which were identified in Fasudir project (<http://fasudir.eu/>):

Table 1. Category, Stakeholders and Objectives of stakeholders. (Source: ENERJ and FASUDIR Projects)

Category	Stakeholder	Objectives			
		Economic	Environmental	Social	Political
Energy Policy makers and authorities	-Local/Regional/National authorities -Covenant of Mayors Coordinators -Local/Regional/National Energy Agencies	-Stimulate and promote economy. -Optimize consumption and maximize economic benefit.	-Sustainability, CO ₂ reduction, energy security, safeguard of environmental components.	-Increase social welfare, social cohesion and service to citizens.	-Transposition of EU, and national policies and regulations -Formulation of national/local programs and strategic action plans.
Suppliers of energy-related services	-ESCO -Energy management authorities -Trade associations	-Access to coverage of financing. -Minimize amortization. -Innovative energy business models. -Quality of data -Management of big data open standard technology.	-Efficient use of resources.	-Improve quality of life. -Increase awareness of final user and citizen.	-Higher level of transparency. -Data exchange. -Smart data infrastructure.
Energy users	-Large energy users -Associations of condominium managers -Small and Medium Enterprises	-Reduce energy costs.	-Improve environmental conditions. -Sustainable energy.	-Increase welfare and social cohesion. -New services to citizens. -Answers to expectations.	-Coverage of services to the territory.
Experts	-Professional associations and grouping professionals -Universities and Research Centers -Single experts	-Stimulate and promote economy. -Energy simulations. -Economic analysis.	-Experimentation and scientific support.	-Increase welfare and social cohesion. -Third mission. -Promotion of Urban Living Labs.	-Coverage of services to the territory. -Redaction of strategic action plans for the environment and sustainable energy.
Civil society organizations:	-Environmental associations -Local interest groups -NGOs -Citizens associations.	-Reduce energy costs.	-Improve environmental conditions. -Sustainable energy.	-Increase welfare and social cohesion. -New services to citizens. -Answers to expectations.	-Coverage of services to the territory.
Citizens	-Owners -Tenants -Condominiums -Buildings users.	-Reduce energy costs.	-Improve environmental conditions. -Sustainable energy.	-Increase welfare and social cohesion. -New services to citizens. -Answers to expectations.	-Coverage of services to the territory.

3. Existing funding programs and financial schemes

The European Union has been supporting the improvement of energy performance of buildings for many years with a range of financial support programmes, nonetheless financing it is still identified as one of the main barriers when implementing energy renovation in PBs, in particular due to the high initial investments required. Moreover, financial support mechanisms can vary significantly from country to country. Therefore, it is becoming imperative to improve financial support for EE in buildings and to ensure that the regulatory framework is properly implemented, more financing is made available and key barriers are addressed.

This chapter intends to summarize the existing financial mechanisms for PBs identified by the MPs in MED area, which can act as low interest loans or as funds, co-financing EE projects.

Relevant sources for the description of existing financing mechanisms are ENERJ D3.2.2 [4] and NEW FINANCE D3.4.1 [2].

3.1. Funding programs and financial schemes in EU

As indicated by ENERJ D3.2.2 [4], European funding regarding EE measures in PBs can be classified in different types:

- European Structural and Investment Funds: ERDF, Cohesion Fund.
- European Funding Programmes: LIFE, Horizon2020, etc.
- European Project Development Assistance: ELENA, JASPERS, etc.
- Financial Institutions Instruments: EFSI, EEEF, etc.
- Energy Service Contracting: EPC, Energy Supply Contracting (ESC), etc.
- Alternative Financing Schemes: Crowd-funding, On Bill Financing, Green Municipal Bonds, etc.

3.1.1. European Structural and Investment Fund

European Regional and Development Fund (ERDF)

As part of the European Structural and Investment Funds (ESIF) the ERDF funds projects related to the EE of PBs. The main beneficiaries of the fund include local, regional, national authorities, NGOs, social cultural and educational institutions, companies SMEs and associations with the EU-28 Member States (MS) being eligible for participation. The focus areas for the ERDF depend on the Operational programmes and can include Renewable Energy Sources (RES), smart distribution systems and EE infrastructure. Other focus areas may include Research, Innovation, ICT the Competitiveness of SMEs, planning for low-carbon economy, climate

change adaptation and risk management, environmental protection and resource efficiency. The type of funding may come as grants which is usually co-financed, financial instruments such as guarantees, loans, equity participation and other risk-bearing mechanisms and technical assistance support. Furthermore, European Territorial Cooperation Programmes may also provide funding opportunities.

Cohesion Fund (CF)

CF is another fund included in the ESI Funds, which is available only to 15 Countries of the EU (Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia and Slovenia) with its main beneficiaries being local and regional authorities. The focus areas of CF include energy-related ones: the use of renewable sources and efficiency, the low-carbon economy, climate change adaptation, risk prevention and management, environmental protection and resource efficiency. Funding comes in the form of grants, financial instruments such as guarantees, loans, equity participation and other riskbearing mechanisms, a possibility of technical assistance and support, along with some indirect funding (e.g. loans, risk capital and seed funding).

More information on how to apply for ESI Funds is available in D3.2.2 [4] of ENERJ Project.

3.1.2. European Funding Programmes

Financial Instrument for the Environment (LIFE (Environment and Climate Action))

The main beneficiaries are PAs, SMEs, private non-commercial organizations and NGOs and EU-28 MSs can participate. The focus areas of LIFE include environment and resource efficiency, nature and biodiversity, environmental governance and information, climate change and mitigation, climate change and adaptation and climate change governance and information. The EU contribution for 1-5 beneficiaries (traditional projects 1-5 years) ranges between €500,000-€1.5 million and for 2-10 beneficiaries (integrated projects 6 years or more) between €8 million - €15 million, with a co-funding rate between 2014-2017 at 60% and between 2017-2020 at 55%, whereas for capacity building projects between 2014-2020 the funding is 100%. The types of projects that LIFE provides funding for include demonstration and pilot, best practices, information awareness and dissemination, technical assistance, capacity building and preparatory projects and the funding comes in the form of grants.

Urban Innovation Actions (UIA)

The beneficiaries include local authorities with a population of at least 50,000 inhabitants or an association or groupings of local authorities that their inhabitants sum up to 50,000 and the participating countries are the EU-28 MSs. The initial call focus areas were integration of migrants and refugees, jobs and skills in the local economy, energy transition and urban poverty, but next calls will also include: climate adaptation, circular economy, housing, urban mobility, green procurement,

digital transition, air quality and nature-based solutions. The average project size must be a maximum of €5 million per project and the co-funding rate is set at a maximum of 80% with a project maximum period of three years. The type of projects that are being funded under UIA include new innovative actions to interconnected and interrelated local challenges, thus testing new urban solutions in pilot projects and participatory processes involving stakeholders. The funding comes in the form of grants (cofinancing).

HORIZON 2020

EU 2014-2020 Framework Programme for research and innovation, supports researchers, entrepreneurs, no-profit associations and public bodies in the implementation of innovative projects, and also focuses on clean energy in the building sector, contributing to increase the market attractiveness of EE investments. Co-financing can reach 100% of total eligible costs for R&D projects and 70% for innovation projects.

INTERREG EUROPE

The main beneficiaries are municipal institutions and administrative bodies, social, cultural and educational institutions, NGOs, companies, SMEs and associations and the countries that are included are the EU-28 along with Switzerland and Norway. They must include at least three countries out of which at least two are Member States. The focus areas are research and innovation, ICT, competitiveness of SMEs, low-carbon economy, climate change adaptation and risk management, environmental protection and resource efficiency and transport. The specific objectives of these types of projects are the dissemination of good practices and expertise in sustainable urban development including urban and rural linkages and the reinforcement of the European Territory Cooperation Programme and the effectiveness of the cohesion policy. The project size depends on the interregional cooperation and the co-funding rate is 85% for all the priority topics and 74.52% for the 'technical assistance' axis. The funding is made available in the form of grants.

3.1.3. European Project Development Assistance Facilities

European Local Energy Assistance – European Investment Bank (ELENA EIB)

The main beneficiaries are local and regional authorities or other public bodies and a grouping of such bodies (legal entity with public service mission, controlled by a PA and financed by more than 50% by public sources). The participating countries can be the EU-28 and the overseas countries and territories. The projects can be co-financed up to 90% with a budget cost of more than €30 million and the focus areas include EE in buildings or street lighting, integrated RES in buildings, sustainable district heating/cooling systems, Combined Heat and Power (CHP) and RES, EE and integrated renewables in urban transport and sustainable freight logistics. Furthermore, the focus areas include smart grids, ICT infrastructure for EE, inter-modal transport facilities and climate change adaptation. The leverage factor for these projects needs to be 1:20.

European Local Energy Assistance – Kreditanstalt für Wiederaufbau (ELENA KfW)

The main beneficiaries are local and regional authorities or other public bodies and a grouping of such bodies and eligible for participation are financial intermediaries, targeting small local investments in France, Italy, Austria, Poland and Denmark. The focus areas include EE in public/private buildings and street lighting, integrated Renewable Sources, EE and integrated RES in urban transport including freight logistics in urban areas, local infrastructures for EE and municipal waste-to-energy projects. The average investment size of such projects needs to exceed €50 million with a leverage factor of 1:20 and a co-financing rate up to 90%.

Joint Assistance to Support Projects in European Regions (JASPERS)

The main beneficiaries are local, regional, national authorities or other entities with public interest. The countries that are eligible to participate include all EU countries along with the Instrument for Pre-Accession Assistance (IPA) countries. The focus areas include infrastructure, roads, rails, air and maritime transport, water and waste water, waste management, energy projects including EE in buildings, district heating, RES production and CHP, as well as urban transport. The project size needs to be above €50 million and for transport cases above €75 million and the cofinancing can be up to 100% of the eligible support.

3.1.4. Financial Institution Instruments

European Fund for Strategic Investments (EFSI)

The main beneficiaries include the public sector, entities of all sizes, including utilities, special purpose vehicles or project companies, SMEs, mid-caps, national promotional banks or other intermediate banks, funds and any other form of collective investment vehicles and investment platforms. The eligible participating countries include the EU-28 and Albania, Iceland, Israel, FYROM, Montenegro, Serbia, Turkey, Norway and Switzerland. The focus areas include (Digital) infrastructure development in transport and energy, RE, EE and energy interconnections, risk financing for SMEs and mid-caps, education, health, environmental and natural resources. There are no restrictions in the eligible project size. A guarantee of €16 billion should cover first losses of higher-risk projects and an additional €5 billion allocation of European Investment Bank (EIB) capital to co-invest.

EIB Municipal Framework Loans

The main beneficiaries are local and regional authorities with more than 75,000 inhabitants and the participating countries may include the EU-28 and other countries (e.g. Turkey, Montenegro and Ukraine). The focus areas include urban roads and public transport, water, sewage, solid waste, education, health facilities, social housing, public buildings, energy (e.g. EE in PBs), cultural and sport facilities. The projects average investment size needs to be smaller than €50 million and the financing comes in the form of a loan.

Debt for Energy Efficiency Projects (DEEP GREEN initiative): Private Finance for Energy Efficiency (PF4EE) Instruments

The beneficiaries are divided into four pillars:

- Pillar 1: local/regional authorities and public bodies
- Pillar 2: Banks (Private Finance for EE)
- Pillar 3: ESCOs
- Pillar 4: Utilities

The countries in which the program operates are limited to Spain, Czech Republic and France. The focus areas include public and private building stocks, public lighting, district heating and cooling networks, urban transport in urban and sub-urban agglomerations and EE (investments in RES are eligible in combination with EE gains). The average investment size is for projects below €5 million, and the program operates through the support of local financial intermediaries via low-cost, long-term loans, credit risk protection and enhanced lending expertise for EE.

European Energy Efficiency Fund (EEEF)

The main beneficiaries are local and regional authorities, public and private entities acting on their behalf (i.e. utilities, public transportation providers, social housing associations) and it is eligible for the EU-28 MSs. The focus areas include EE, RE and clean urban transport. The project size needs to be in the range of €5-25 million and the financing come in the form of loans, guarantees and equity.

3.1.5. Energy Service Contracting

An energy service contract it is a contract between an energy service supplier or provider and final energy user. According to the report “Energy Service Companies in the EU” [5] from the JRC, these contracts can be divided into three groups:

- EPC
- ESC
- Build-own-operate-transfer

The ranking of increasing relative risk associated to the three contracts is indicated in Figure 5.

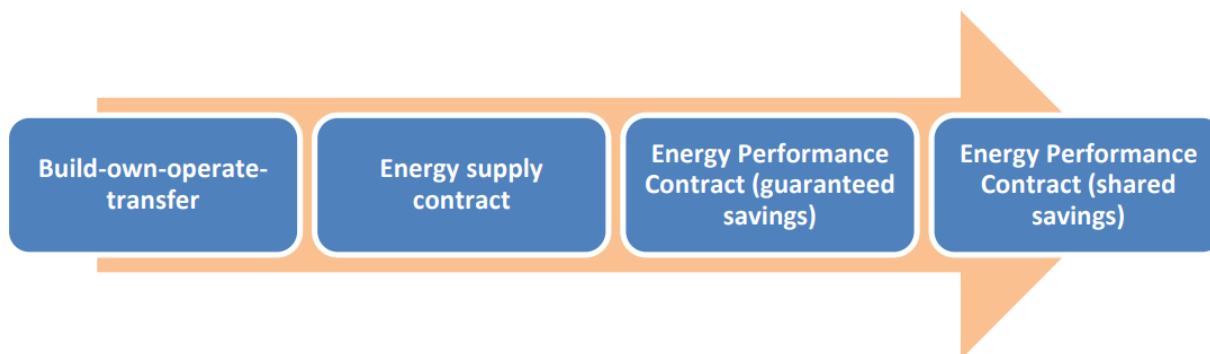


Figure 5. Ranking of different energy contracting types according to growing associated risk level
(Source: JRC Science for Policy Report. Energy Service Companies in the EU)

Energy Performance Contracting (EPC)

EPC is a contractual arrangement between a beneficiary and an ESCO about EE improvements or renewables installations. Normally an ESCO implements the measures and offers the know-how and monitoring during the whole term of the contract.

There are two types of EPC-based projects, compared in

Table 2:

- **Guaranteed savings EPC:** ESCO designs and implements the project and guarantees the energy savings. The client do not face any performance risk. In case of extra savings, these are shared between ESCO and client.
- **Shared savings EPC:** The savings are split in accordance with a pre-arranged percentage.

Energy Supply Contracting (ESC)

The ESC is a contract in which the contracting partner provides energy, typically in form of heat. In this contract the ESCO undertakes installation works and supplies energy to the client. It aims at reducing supply costs rather than implementing EE measures on the demand side. The implemented measures can be related to the optimization of equipment or to the production of electricity from cogeneration plants.

Table 2. Key characteristics of EPCs and ESC compared (Source: JRC Science for Policy Report. Energy Service Companies in the EU)

	EPC - Guaranteed savings model	EPC - Shared Savings model	Energy Supply Contracting (ESC)
Service provider	ESCO/EPC provider	ESCO	Energy Supply Provider Company (ESPC)
Key elements	Implementation of energy saving measures with on-going monitoring & verification services to provide guaranteed energy savings.	Implementation of energy saving measures (mainly demand side) to provide cost savings associated with the overall energy/utility bill.	Efficient supply of useful energy such as heat, steam or electricity is contracted, measured and delivered in physical units.
Energy savings to be achieved	High - comprehensive and detailed approach covering both supply and demand side.	High - primary focus and incentive is for cost savings with technical operation requirements as secondary.	Usually low - limited to the supply side (boilers, chillers, etc.) without regard to demand- side equipment.
Guarantees	Yes. The ESCO guarantees the performance related to the level of energy saved throughout the contract life (i.e. to energy cost savings in constant prices).	Not as standard. However, the ESCO may guarantee a minimum performance related to cost of energy saved in current prices throughout the contract life.	May include incentives related to energy use reduction on the supply side, but without assuming any risk in case the expected efficiency improvement is not reached.
Payment	Payment derived from the energy savings achieved in constant prices of the base year.	Payment linked to the achieved change in energy costs.	Payment of a fixed rate/tariff, normally without energy performance requirements.
Provider's risk	Assumes technical design, implementation and performance guarantee risks.	Assumes performance risk, risk of energy price change (depends on current prices) and customer credit risk.	Usually does not assume technical or financial risk.
Energy savings transparency	The energy consumption is measured before and after the measures are implemented. The transparency depends on the quality of measurement & verification. In general the more independent M&V, the more transparent are the energy savings.	Depends whether and what quality M&V is provided. In general, the more independent M&V, the more transparent are the energy savings.	Low - a specific energy bill reduction is established (in monetary, not physical units). Usually the contract does not take into account the measurement of the energy efficiency.

Build-own-operate-transfer

Under this contract, the ESCO designs, builds, funds, owns and operates the scheme only for a delimited period. The costumers are charged according to the service, which includes capital and operating costs recovery and project profit.

3.1.6. Alternative financing schemes

Soft loans, loan guarantees and portfolio guarantees

Soft loan schemes (below market rates and longer payback periods) and loan guarantees (buffer by first losses of non-payment) are mechanisms whereby public funding facilitates/triggers investments in EPC. Furthermore, portfolio guarantees for ESCOs reduces the risks of payment delays, so reduces the overall costs of financing (solid protection from later payments).

Revolving Loan Funds

A revolving loan fund is a source of money from which loans are made for multiple sustainable energy projects. Revolving funds can provide loans for projects that do not have access to other types of loans from financial institutions or can provide loans at a below-market rate of interest (soft loans). This counts as an example of financial instruments using ESIF.

Cooperatives, Citizen-based financing and Crowd-funding platforms

As described in Figure 6, a crowd-funding platform pools resources of different actors, utilizing most of the time an internet-based platform. This can happen in combination with energy cooperatives, which are business models based on shared ownership and democratic decision-making procedures.

WHAT IS CROWDFUNDING?

Crowdfunding is an emerging way of funding new ideas or projects by borrowing funding from large numbers of people, often through an internet-based platform.

In these markets, any individual can propose an idea that requires funding, and interested people can contribute to economically support the idea. These markets have recently emerged as a viable alternative for sourcing capital to support innovative, entrepreneurial ideas and ventures.

The European Commission is exploring the possibilities and the risks of crowd-



funding to identify whether European-level policy action in this field is needed. The national legal frameworks which govern crowdfunding are also being reviewed. At the moment the Commission does not intend to introduce EU laws for crowdfunding, rather it will keep reviewing developments in the sector.

The European Crowdfunding Stakeholders Forum assists the Commission in developing policies for crowdfunding.

Figure 6. Crowdfunding description (source: New Finance Project)

On-Bill Financing

Energy suppliers collect the repayment of a loan through energy bills. It leverages the relationship which exists between a utility and its customer in order to facilitate access to funding for sustainable energy investments.

Green Municipal Bonds

Local government (or their agencies) can issue green bonds to fund their sustainable energy projects. A green bond can operate as a normal bond, which is a debt that will be paid back, depending on the characteristics of the bond, with interest. These can be made attractive via tax-exemptions.

3.2. Funding programs and financial schemes at national level

The deliverable *D3.2.2 Funding Tools* [4] (ENERJ Project) provides information regarding some funding mechanisms for EE projects in Albania, Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia and Spain (Figure 7).



Figure 7. Countries with national funding information in ENERJ Project (Source: amcharts.com)

Most of the partner countries have used the CF along with ERDF for energy upgrading the PB stock and have established National Funds providing Grant schemes for the EE projects in PBs.

Albania

The EE Law requires the setup of a fund for EE measures.

Croatia

The Ministry of regional Development and EU funds, coordinate the 'Competitiveness and Cohesion' Operational Programme which includes measures for the EE of PBs. Besides, 'The Croatian' and the 'Third National Action Plan' are two national funds that contribute to the reconstruction of PBs with better EE and the

penetration of RES. Additionally, the Environmental Protection and Energy Efficiency fund (EPEEF) collects and invests extra budgetary resources in programmes and projects of environmental and nature protection, EE and RES.

Cyprus

The Ministry of Energy, Commerce, Industry and Tourism has created a funding scheme through the 'RES and EE' Fund, for co-financing energy renovations in PBs, offices and households. Moreover, a scheme for the installation of Photovoltaics (PVs) is in place for all kinds of buildings.

Greece

A two-stage National EE Programme was created for the energy performance of PBs and selected systems in households. Besides, a Green Fund uses the fines collected relating to environmental issues and redistributes the money into eco-friendly measures, and Local Authorities have access to structural funds.

Italy

A fund for improving the EE of schools is in place along with a € 900 mil fund for co-financing EE measures in public authorities (€ 200 mil), businesses and individuals.

Malta

A grant scheme is in place for the restoration of buildings in Urban Conservation Areas, managed by the Planning Authority. Governmental grants include a € 2,300 grant for the installation of PVs and the 40% co-financing for the installation of solar thermal. Moreover, funds from the ERDF are available for PBs for projects regarding EE, smart energy management and RES.

Portugal

The Operational Programme for Sustainability and Efficiency in the use of Resources was established by the Government and the European Commission and includes the 5 European Structural investment funds (ERDF, CF, ESF EAFRV and FEAMP) for low-carbon economy, promotion of resource efficiency, adaptation to climate change and protection of the environment.

Slovenia

The Ministry of Infrastructure runs a fund providing up to 40% subsidy for EE projects in PBs, where until 2023 € 115 mil will be invested by the EU CF and € 50 mil by the government.

Spain

A Governmental grant is in place for EE refurbishment in public and private buildings co-financing 35-50% of the investment. Additionally, a € 200 mil grant is in place for EE refurbishments on specific measures for building owners, local and regional authorities providing a 20-30% grant and a 60-70% loan without interest.

A grant of € 506.6 mil is approved by the ERDF for municipalities under 20,000 inhabitants, with 70% for EE and 30% for RES.

3.3. Funding programs and financial schemes at regional level

The deliverable ENERJ D3.2.2 [4] provides information regarding some regional funding for EE measures in PBs in Greece, Italy, Portugal and Spain (Figure 8).



Figure 8. Countries with regional funding information in ENERJ Project (Source: amcharts.com)

3.4. Funding programs and financial schemes at local level

According to the deliverable ENERJ D3.2.2 [4], local funding for EE measures in PBs is commonly done through EU co-funded projects where some small investments may be funded, along with EE studies. Typically local authorities fund EE through their own budgets although in some cases funds may be available in deprived areas. Besides, the document provides information regarding local funding for EE measures in PBs in Croatia, Cyprus and Spain (Figure 9).



Figure 9. Countries with local funding information in ENERJ Project (Source: amcharts.com)

3.5. Other funding schemes

ENERJ D3.2.2 [4] provide information on other funding schemes for Albania, Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia and Spain (Figure 10). These schemes that can be used for the EE upgrading of PBs include green loans from local banks, PPP and EPC from ESCOs. Most countries have banks that already provide green loans.



Figure 10. Countries with other funding information in ENERJ Project (Source: amcharts.com)

Albania

Domestic banks have been involved in the provision of credit lines for EE building envelope upgrades, appliances and industrial process equipment retrofits with the support of International Financial Institutions (IFI) and international donors. Knowledge and understanding of ESCO projects are however less widely shared and therefore improved discussions and coordination between the EE Fund and domestic commercial banks for gaining momentum in this sector should be a priority for the next review period.

The exact form, mix and levels of leverage possible will be dependent on the sector with a greater proportion of public funds (i.e. lower rates of leverage of private sector funds) likely to be required for investments perceived as higher risk.

Croatia

The Croatian Bank for Reconstruction and Development (HBOR) has a special line of credit program for projects related to environmental protection, EE and RES. HBOR approved for EE projects about € 13,12 mil. of credit funds from 2011 to 2013. These credits have interest rate of 4%, which is very low compared to Croatian standard rates. Besides, various commercial banks provided loans called Green Line, which make easier to invest in EE and RE projects.

Cyprus

Four Banks in Cyprus are currently financing EE projects through loans the Bank of Cyprus, the Hellenic Bank, the Cooperative Central Bank and AstroBank.

Greece

Private partnership schemes have only very recently started to operate in Greece, mainly in the form of the replacement of city street lights by ESCO's, in cooperation with the relevant Municipalities. However, the recent economic crisis has hampered their dissemination on a nation-wide scale, due to the lack of liquidity of ESCO's themselves. In fact, ESCO's in Greece have mainly limited their operation to consulting and have not so much dealt with financing, probably due to the traditional structural weaknesses of the bank sector in the country.

Italy

Financial tools include the so-called National Incentive Decrees, which facilitates the installation of RE plants in PBs, and the Project Financing Tool that enabled interventions for street lighting.

Malta

"IRRESTAWRA DAREK" is a scheme for restoration and energy retrofitting works for PBs and privately owned residential properties located within Urban Conservation Areas. This scheme allows applying for a rebate on 70% of eligible costs of restoration and conservation costs, including EE interventions.

There are other grants addressed for RE production like PV Grant Scheme, Feed-in Tariffs Scheme and the Solar Water Heaters Grant Installation.

Portugal

The Decree-Law 29/2011 establishes the legal regime applicable to the constitution and execution of EPC that cover the nature of EE management contracts.

Slovenia

The Eco Fund is a Slovenian Environmental Public Fund which aims to promote development in the field of environmental protection. It provides financial support for environmental projects, mainly through soft loans from revolving funds and also through grants. Considering PBs, grants are given only for investments in new buildings where public education takes place, constructed as low energy and passive buildings. While for PBs retrofit projects, only loans can be obtained.

Spain

The Energy Saving and Diversification Investment Fund (FIDAE) is a € 123 mil. fund launched by the Institute for the Diversification and Saving of Energy (IDAE) that aims to finance sustainable urban development projects to improve EE and increase RE. It is co-financed by the ERDF and the IDAE agency, and it is operated by the EIB.

The promoters of these projects can be public entities, ESC or private companies belonging to one of the following regions: Andalusia, Canary Islands, Castilla y León, Castilla-La Mancha, Comunidad Valenciana, Extremadura, Galicia, Region of Murcia, Ceuta and Melilla.

The projects financed by this fund should fit to the sectors of buildings, industry, transport and infrastructure of public services related to energy.

4. Best practices for financing Energy Efficiency

4.1. Case studies

The deliverable D3.2.1 [6] of STEPPING project lists and analyzes 27 examples of EPC best practice in France, Greece, Italy, Malta, Portugal, Slovenia and Spain. A comparison among 19 of them is made in

Table 3. The report however highlights that the examples of EPC best practices in PBs do not abound in MED countries.

The best practices provided in the deliverable provide information on:

- Basic information of the building
- Building data
- Technical parameters
- Contracted measures
- Contract related figures
- Contracting models applied
- Funding approaches
- Type of buildings included in the contracts
- Tender approaches
- Awarding procedures

Table 3. Comparison of 19 EPC best practices (source: STEPPING Project)

Name	Contract duration	Total investment € (X 10 ⁵)	Simple Return Period on Investment (yr)	Guaranteed energy savings %/y (X 10)	Usable area (m ²) (X 10 ³)	Energy saving / Investment (kWh/€ year)
Sport center (Barcelona)	10	13	3,93	3,9	2,80	2,67
Laboratory (Barcelona)	5	0,4	2,49	1,5	0,35	2,36
Liceu (Barcelona)	6	13	3,94	4,4	0,90	3,38
Catalan institute of Oncology	6	7	1,69	2,2	6,42	6,14
EPC for several buildings (Montluçon)	10	17,6	10,00	1,7		0,20
EPC on boilers replacement (Annemasse)	9	3,28	9,00	2,5	1,65	0,00
Scuola materna (Rubiano)	13	0,426	8,52	6,2	0,14	1,91
Bruino	13	4,672	12,01	6,2	0,70	1,36
Orbassano	13	8,357	11,09	5,8	1,36	1,48
Piosasco	13	8,642	17,05	6,3	0,52	0,96
EPC 2005-2011 (Province of Modena)	7	16,307	7,00	0,0	26,01	3,31
EPC 2013-2020 (Province of Modena)	7	8,003	7,00	0,0	27,17	3,65
Municipality of Kranj	15	3,2	6,49	5,6	3,33	3,62
Sport complex with Olympic pool	10	7,8	7,58	5,6	2,20	2,62
General Hospital Brezice	15	5,320	5,14	2,5	0,75	1,53
Deep renovation of Brda Municipal Hall	15	3,740	7,53	0,0	0,05	0,68
Educational and Rehabilitation Facility in Ravda	6	2,605	7,23	5,3	0,45	1,76
Primary school Eugen Kvaternik (Rakovica)	12	3,092	17,74	5,3	0,15	0,40
Students' dormitory in Sofia University	5	11,849	6,94	6,9	3,27	0,14

As to the results of the analysis carried out within the STEPPING project, it can be highlighted that:

- Most often owners of buildings are municipalities, being educational and sports centers the most commonly found buildings.
- The average age of buildings is around 50 years (ranging from 3 to 156 years).
- The standard type of EPC is the most frequently model of contracting applied, guaranteeing the achieving of energy savings (range between 7-69%) for the contract duration.
- The average of achieved savings is about 36%.

- The initial investment costs is very variable, ranging between about 5.000 € and about 20 M€ and are mainly covered by ESCOs.
- The total avoided CO₂ emissions are more than 11.400 MT (metric tone) per year.
- About 38% of procedures followed grouping methodology².
- The most frequent interventions were HVAC unit renovation, windows replacement, building management system, energy monitoring system, initial energy audit, training of users and Measurement&Verification plan.

The NEW FINANCE project platform (<http://newfinanceplatform.com>) has a section to find good practices on innovative financial mechanisms for implementation of EE models. Besides, the deliverable NEW FINANCE D3.4.1 [2] presents four case studies which include different financial models like PPP, EPC and ESC, as shown in Table 4.

Table 4. Selected Case Studies of EE projects in PBs. (Source: NEW FINANCE Project)

Description	Financial Model	Contract duration (year)	Type of intervention	Total investment	Simple Payback Period (year)	Energy Saving (kWh/m ² /year)
Educational building in Montese (Italy)	PPP	9	EE active measures and replacement of window frame.	193.055 €	7	47
Hospital in Karlovac (Croatia)	EPC, ESC	0	EE active measures and RES, façade and roof renovation, windows and door replacement, installation of thermal sub-stations, heat pumps, solar collectors, new cooling system, thermostatic valves, luminaires and introduction of natural gas.	8.625.947 €	14	216
Sport complex (Spain)	EPC, ESC	10	EE active measures and RES, improvement of lighting, Air Handler units, swimming pools' pumping system, insulation of pipes and pools, replacement of oil boilers and cooling tower, installation of new dehumidifier pump, replacement of boiler with solar thermal system, installation of monitoring and management system, optimization of the use of facilities and water saving actions.	1.200.000 €	7	3.988.772 kWh
12 High schools (Spain)	EPC, ESC	4	Energy management, optimization of start-ups of heating system, follow up and management of energy consumptions, training and awareness of users, deployment of best practices.	25.000 €		59.255 €

As in the example shown in Figure 11, the report provides other relevant information like the building owner, characteristics of the building, financial barriers, public benefits and information on the measures and verification.

² One single procedure applied to a group of buildings.

CASE STUDY 1

ENERGY EFFICIENCY OF CLEAR CLAPS IN MUNICIPAL BUILDINGS

Location: Montesilvano (Italy)

Building Owner: Municipality of Montesilvano (Italy)

Duration of Contract and/or loan: 9 Years

Sector: Education

Type of intervention: EE (Active measures) including replacement of existing window frames with new ones having lower thermal transmittance than the one required by the current regulation.

Total Investment: 193.055,00 €

Simple Payback Period: 7 years

Energy Saving: 47 kWh/m²/year

Financial Model: Public-private partnership

Physical characteristics of the building:

- Building Size: <1.000 m²

Financial Barriers:

- Limited access to public funds

Public Benefits:

- Lower GHG emissions
- Other social benefits: Reduction of public expenditure of the Municipality.

Integration in a larger implementation scheme: the project is part of an overall scheme for the replacement of windows frame in several municipal schools, and for the replacement of heat generators and installations of solar thermal collectors in several schools and sport facilities.

Replication/transfer/upscale: The intervention has been implemented in different buildings of the Municipality.



Figure 11. Case study 1 of Financial Model (source: New Finance Project)

The deliverable *D3.3.1 SISMA Baseline* [7] (SISMA Project) provides the results of an analysis carried out on the SISMA Database entries. The report highlights that when the Internal Rate of Return (IRR) of a project is below the minimum level for its bankability, the subsidy shall sum up the exact amount that makes the project reach the required IRR level. The report mentions that none of the examples reported tackles this matter and none of the best practices can be regarded as a suitable guideline to develop the SISMA Model³.

The SISMA Project report [7] shows also data of an initial example of best practices addressing investments with long paybacks produced by a project partner in Slovenia, as indicated in

Table 5.

Table 5. Best practices of SISMA Project in Slovenia (Source: SISMA Project)

Municipality	N° of PBs	PPP	EU Funding	ESCO	EPC	Subsidy	Project funding in €			
							Public body	EU funding	ESCO	TOTAL
Brda	3	Yes	Yes	Yes	Yes	Yes	269.626	632.483	363.713	1.265.822
Novo Mesto	8	Yes	Yes	Yes	Yes	Yes	553.741	993.626	1.610.526	3.157.893

³ Innovative tool to evaluate and mobilize investments in deep energy retrofitting of public buildings.

4.2. Dissemination material

The New Finance Project developed a web platform (<http://newfinanceplatform.com/good-practice/>) in which information about good practices of innovative financial mechanisms for implementation of EE models is made available.

Moreover, the New Finance project elaborated on-line videos showing the financial schemes implemented in each partner region:

- North-West Croatia (Croatia):

<https://www.youtube.com/watch?v=c1ZmpXXtYB8>

- Catalonia (Spain):

<https://www.youtube.com/watch?v=3pdD41hGKwc>

- Abruzzo (Italy):

(To be elaborated)

- Malta:

<https://www.youtube.com/watch?v=mV9L5hI7ITY>

- Savinjska, Šaleška and Koroška (Slovenia):

https://www.youtube.com/watch?v=D_qMLgurD4

- Una-Sana Canton (Bosnia and Herzegovina):

https://www.youtube.com/watch?v=_xFiiSiXMFo

On the other hand, STEPPING Project elaborated on-line videos in which EPC for PBs energy refurbishment is explained:

<https://www.youtube.com/watch?v=ijlO5gnDqII> (English)

<https://www.youtube.com/watch?v=Y2k3RMDozN4> (French)

<https://www.youtube.com/watch?v=dhbmNfFM6ms> (Greek)

<https://www.youtube.com/watch?v=BhtnSNiAQZc> (Italian)

<https://www.youtube.com/watch?v=qNq10APODwE> (Maltese)

https://www.youtube.com/watch?v=VMU2lww_q7k (Portuguese)

<https://www.youtube.com/watch?v=O7miHQeURok> (Slovenian)

<https://www.youtube.com/watch?v=XQqumYTzx-k&t=2s> (Spanish)

CONCLUSIONS

Financing barriers

The MEDNICE, ENERJ and NEW FINANCE projects implemented different activities in order to identify the most relevant and recurrent financing barriers. These can be classified and summarized in five main categories: structural, technical, financial, knowledge and other.

Among the structural barriers, there are important issues related with procedures, which are complicated, not standardized and lengthy (e.g. delays in approvals implies costs for different stakeholders). Besides, legislation is heterogeneous across the various territories covered by the projects, its implementation is not straightforward and conflicts between different administration levels may take place due to the different jurisdictions.

The implementation of EE projects through innovative financing schemes in PBs has also encountered technical barriers. Many stakeholders agree that there is a lack of data about buildings, supporting material (e.g. technical drawings) and definition of PBs' typologies. This issue, together with the low consolidation and long pay-back periods of some technologies, increases the technical complexity of EE projects, and consequently, ESCOs are reluctant to participate in some tenders.

From the financial point of view, an important issue noted by the projects is the lack of dedicated loans and resources for energy renovation, especially due to debt limitation in public sector and the low financial autonomy of municipalities. There are also difficulties to manage and optimize subsidies; consequently, there is a need of effective financial models. In addition, banks are reluctant to assume risks, which are not easy to allocate by ESCOs, hence they apply high interest rates.

Lack of knowledge seems to be a relevant issue affecting all the actors. There is insufficient knowledge, awareness and trust towards new financial schemes like EPCs or PPP, but also lack of trust towards ESCOs. Moreover, the internal technical know-how of building owners, who need external technical advisers, and the lack of awareness of financial institutions, which leads to lack of funding have both been found to be scarce.

Other issues, such as the small dimension of EE projects, are seen as barriers for Financial Institutions. Concerning ESCOs, there is scarcity of adequately structured ESCOs, which reportedly have also communication issues with the building users.

In the previous MED Programme, MARIE project (IS-MED10-002, 2011-2014) [8] identified 33 barriers for EE and underlined the 12 most significant ones.

Some of the highlighted barriers in MARIE project are still remaining and hindering the development of EE projects. These barriers are mainly related to the legal framework, the capacities, knowledge and skills of stakeholders, the low or uncertain performance of some technologies, the lack of data of the building stock, the unfeasibility of some EE projects due to lack of financial instruments and the

perpetual lack of awareness. While other barriers, such as the inability to account for environmental and social costs in current energy prices and the fragmented structure of the supply side, are not mentioned at present, this does not mean that they do not continue to exist.

Stakeholders

With the approval of new European Directives on EE and RES, and their transposition into national laws, new technologies, business models and actors have appeared in the construction sector. Thus, proper identification, analysis, mapping and prioritization of the stakeholders are becoming essential.

The ENERJ project proposes three phases for mapping of stakeholders and identifies 6 main categories of target groups: Energy policy makers and planners, Suppliers of energy-related services, Energy users, Experts, Civil society organizations and Citizens.

Funding programs and financial schemes

To overcome the above-mentioned barriers for financing EE in PBs, several funding programs and financial schemes are available to the PA. The ENERJ and NEW FINANCE projects provide information on these programs and schemes at European, national, regional and local level.

At the European level, one can mention the European Structural and Investment Funds, European Funding Programmes, European Project Development Assistance, Financial Institutions Instruments and other Alternative Financing Schemes like EPC or Crowd-funding. At the national level, the ENERJ project provides information for funding EE projects in Albania, Croatia, Cyprus, Greece, Malta, Portugal, Slovenia and Spain, as well as information on green loans from local banks.

Best practices

Some of the identified financial schemes are already implemented by Mediterranean PAs. The STEPPING, NEW FINANCE and SISMA project have collected information on good practices.

EPC seems to be the most common innovative financing schemes used by PAs. Nevertheless, STEPPING project highlights that EPC do not abound in MED countries.

Besides to the dissemination of best practices, NEW FINANCE project produced five videos in local languages with information of the financial schemes implemented in each region.

Practically all the best practices on financing PBs collected and shown by the MPs are EPCs, or EPCs complemented with other financing support. This fact clearly indicates that up to now, EPC is seen as the most effective available financing scheme. A likely explanation is that it is seen as a relatively reliable scheme in comparison with the others, there is a new but clear regulatory framework, and new actors (ESCOs) are already established in the market. Stakeholders are working on

overcoming existing barriers and make EPC a more reliable model. Moreover, classical financing institutions are still reluctant and hesitant on financing EE projects with low interest rate, even for public administration.

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