



**Financing Energy Efficiency Retrofits in the
Built Environment in Albania:
BARRIERS AND OPPORTUNITIES**

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EXECUTIVE SUMMARY



I. EXECUTIVE SUMMARY

The recent climate changes in Europe have mobilized the countries to shift to low carbon economy and diversify energy sources to mitigate the impact on environment, communities and economy. According to European Environment Agency (EEA) climate change is a phenomenon that is continuous even if currently we would cut off the greenhouse gas (GHG) emissions. It is an urgent need to adapt to the changes and to prepare action plans for future climate changes.

Europe is affected by the climate change in many ways: temperature changes, rising of the sea level, droughts and extreme precipitations. The consequences have led to disturbances on socio-economic, environment and population health. (EEA, 2015).

It is now confirmed that by mid of 21th century there will be a doubling of carbon dioxide emission to 560 pm, increasing the global temperature by at least 2.2 °C. Even an increase of 2 C above pre-industrial levels, may bring substantial climate change with enormous social, human and environmental impact. The main causes of greenhouse gases are from natural and anthropogenic activities. The main sources of greenhouse gases caused by human activities are: Burning of fossil fuels (gas, coal, oil) in different sectors of economy (energy, transport, build environment, industry); Agriculture and deforestation, Waste management. (EEA, 2015). Increasing energy efficiency in all consuming sectors plays a vital role in coping with future energy climate challenges. Reducing energy consumption by increasing energy efficiency is a highly successful way of meeting the key energy policy targets of supply security, affordable costs of energy services and environmental sustainability. Energy efficiency has moved up the political agenda in recent years. Worldwide, concrete saving targets are part of the EU's "20-20-20 by 2020" strategy, agreed by EU heads of state and government at their 2007 summit. Residential buildings are among the main consumer of final energy. (Buildings Performance Institute Europe, 2010)

Energy demand in the residential building sector represents a big challenge for Albania. In 2013 the sector was responsible for 30 percent of the country's final energy consumption and 60 percent of the country's electricity consumption. The quality of energy services delivered to residential buildings is low. Albanian homes are only heated partially, for just a few hours a day, while the continued use of outdated woodstoves results in numerous environmental and health problems. As a contracting party to the Energy Community Treaty, Albania is obliged to introduce EU energy efficiency legislation. However, achieving the related targets requires more ambitious policy efforts and bigger investments in demand-side energy efficiency than are being made at present. (Novikova, Aleksandra et al.2015)

Financing Energy Efficiency in buildings in Albania is still a major challenge. Despite the proven cost-effective opportunity to reduce energy consumption, a significant proportion of the energy efficiency improvement potential is not being realized. Several barriers and market failures inhibit energy efficiency improvements in buildings. Failure to inform and raise awareness, lack of proper legalization procedures of informal buildings, lack of technical expertise, uncertainty over savings, and lacking of financial instruments are the main barriers identified through this paper. Residents of established households do not easily change their energy consumption habits and, in most cases, the so called "split incentive" discourages both building owners and building occupiers from investing in energy

efficiency measures if direct benefits are not perceived. Financial barriers are crucial in inhibiting investment in energy-efficient building refurbishment. Furthermore, traditional financing investment criteria do not apply to energy efficiency investments; lack of knowledge among finance providers of energy efficiency specificities prevents customers from accessing capital, and the absence of standardized measurement and verification practice further increases transaction costs. Due to the considerable impact of these financial barriers on the financing of energy-efficient building refurbishments, the paper focuses primarily on these barriers and provides solutions how to overcome the barriers through implementation of revolving fund scheme.



METHODOLOGY



II. METHODOLOGY

The purpose of this policy paper is instructive. It aims to be a model developed towards the establishment of a revolving energy fund mainly for the case of Albania. The methodology used is based on desk research by carrying out literature survey of legal, academic and country cases and practices specially focusing upon energy efficiency, financing implementation tools. Moreover, interviews are realized with experts in the field of energy, academics, and local authorities. Furthermore, by this policy paper bases its recommendations on documents analyses, cross-comparative case studies and content analyses. The policy paper takes into consideration and evaluates the current energy efficiency situation in Albania by highlighting the importance of energy efficiency financing implementation schemes. The main proposal is to address the need for establishment of energy revolving fund as an innovative financial mechanism easily adopted in Albania. The researchers have conducted a thorough research work to highlight the main barriers (financial and market barriers) in Albania that prevent the investment in Energy Efficiency Projects and after these barriers have been found, solutions have been proposed based on diverse financial means that can unlock the energy efficiency investment.

- Desk Research

Since the Financing of Energy Efficiency projects include indicators for its implementation through legislation and practice the literature review was carried out through:

Legal review – aiming to access the legal framework and regulations drafted and approved for an enabling environment for financing energy efficiency projects. It includes an overview and analysis of Albanian legislation (including implementation of regulations), as well as international conventions and regulations adopted by Albania. The researchers identified the main EU *acquis* regarding energy efficiency and those parts that have already been adopted and looking at their level of implementation.

Practice assessment – based on secondary data, such as: country needs assessment reports; regional reports; progress reports prepared by donors, international organizations, and national agencies – aiming to identify the barriers and opportunities for energy efficiency financing projects in Albania.

- Quantitative Method

The interview was conducted through the realization of a questionnaire with energy experts and public administration officers. The questionnaire was conducted through face to face interviews with energy experts and public energy directors working in the Universities, NGOs and other relevant institutions. The questionnaire had a combination of closed and likert scale questions with open-ended ones, aiming to gather information on both perception and experience of the respondents on the indicators monitored. The information gathered from the questionnaires was processed and analyzed.



THE NEED FOR ENERGY EFFICIENCY INVESTMENTS IN THE BUILT ENVIRONMENT



III. THE NEED FOR ENERGY EFFICIENCY INVESTMENTS IN THE BUILT ENVIRONMENT

- Albania and Energy Efficiency

Energy demand in the residential building sector represents a big challenge for Albania. In 2013, the sector was responsible for 30 percent of the country's final energy consumption and 60 percent of the country's electricity consumption. The quality of energy services delivered to residential buildings is low. Albanian homes are only heated partially, for just a few hours a day, while the continued use of outdated woodstoves results in numerous environmental and health problems. As a contracting party to the Energy Community Treaty, Albania is obliged to introduce EU energy efficiency legislation. However, achieving the related targets requires more ambitious policy efforts and bigger investments in demand-side energy efficiency than are being made at present. (Regional Environmental Center, REC 2015)

The total number of residential buildings in Albania was 598,267 according to the 2011 census, for a population of 2,821,977 (53.5 percent of the population live in urban areas and 46.5 percent in rural areas) (INSTAT 2011, 2013 and 2014a). The number of dwellings was 1,012,062, of which only 709,865 were inhabited.

Following the market trends, a rapid increase is assumed in the electricity heating of existing dwellings. For this reason, during 2015-2030, electricity consumption will increase by 2.2%/annum, while the consumption of firewood and liquid gas will decrease respectively by about 11%/annum and 10%/annum. By 2030, CO₂ emissions will account for 23% of their level in 2015, mainly due to the change in the type of energy, the transition from liquid gas to electricity. (PKVEE 2017-2020)

From a long-term perspective, it is important to ensure that buildings constructed after 1991 are retrofitted, as they will be responsible for around 43 percent of final energy consumption in the sector in 2030. New buildings will be responsible for 18 percent of final energy consumption in 2030. This is why it is important to prioritize the introduction and enforcement of building codes in order to avoid the need to retrofit these buildings in the future. Detached and semi-detached houses are a clear priority for policy making: in 2030, such buildings will be responsible for 72 percent of final energy consumption for thermal energy uses. (Regional Environmental Center, REC 2015)

The accepted investment costs for the reconstruction of public buildings, to be borrowed by investors, amount to about EUR 550 million for the period of from 2015 to 2030, or 37 million per year. (Regional Environmental Center, REC 2015)

To ensure the completion of renovation of existing stock buildings, Albania should introduce financial incentives for residential sector housing investors. By 2022, financial incentives should be given in order to achieve the low carbon model performance. (PKVEE 2017-2020). Based on some basic financial modeling that have been carried out for typical public buildings in Albania is estimated that the energy efficiency renovation cost is 68 US\$/m², energy savings are estimated 28 kWh/m²/yr (3.5US\$/m²/year) and the carbon reduction 11 gCO₂/m²/yr (UNDP, 2017) From the above is shown that there is a huge potential for savings in terms of energy and carbon footprint. Households consume more than 27.4% of total final energy consumption—about 21 PJ according to data from 2012. The residential sector consumes the largest share of electricity of all sectors—57%. The

dominant forms of energy in household consumption are electricity (42%), fuel wood (45%), and oil- by products 12% (LPG) according to the Energy Balance published by AKBN. Current sources for heating are: 36.4% electricity, 49.6%, fuel wood, 12% LPG, 1.5% diesel, and 0.5% coal based on Energy Balance published from AKBN(National Agency of Natural Resources)

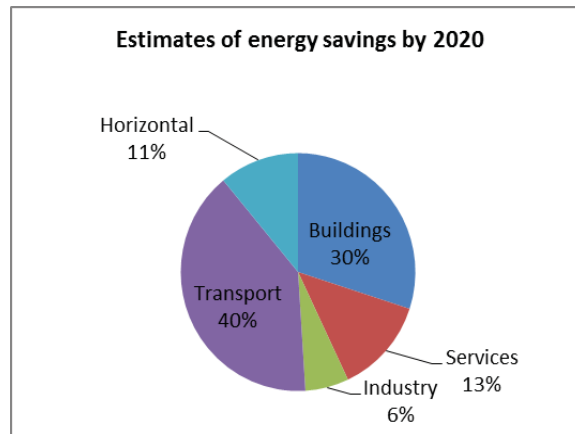


Figure 1: Estimated of energy savings by 2020
(Source: 2nd NEEAP of Albania, 2017)

From the data shown above we identify that the target that must be met is not easy and needs a lot of efforts. The main important elements are the financial instruments that are still lacking on this path. The government must strengthen the collaboration with banks and other investment organizations to increase the possibilities of funding. Moreover, it is quite important to initiate innovative financing schemes that at some extent may overcome the barriers that prevent energy investment at the moment. Facing these challenges this paper aims to give answer “To what extent Albania can overcome the financial barriers and increase investment in Energy Efficiency Projects”?

- Expectations from Europe

Albanian’s entry into the Energy Community Treaty (hereafter ECT) in 2006, often considered a stepping-stone towards European Union (hereafter EU) integration as is seen by the examples of Romania and Bulgaria, marked the beginning of an uphill struggle towards a harmonization of its legal system with that of the EU. There are three particular directives with regard to energy efficiency that the ECT guidelines its member states to transpose within their domestic realms, namely, a) Directive 2012/27/EU18; b) Directive 2010/30/EU19; and c) Directive 2010/31/EU

Directive 2012/27/EU “On energy efficiency”

The scope and aim of this directive involves the creation and facilitation of the necessary conditions for removing the existing institutional, political, and market barriers to energy efficiency measures. Its objective is to promote the onset of a market for energy services and subsequently a delivery mechanism for such services to the final consumer. With the adoption of the Law on Energy Efficiency (Nr. 124/2015) in 2015, Albania has made moderately improvement in this direction, particularly in the creation of an appropriate

legal and institutional framework that supports the implementation of energy efficiency measures. The Law also provides a legal basis for possible development/amendment of secondary legislation. Indeed, the Law has prescribed the setting of energy efficiency targets and plans, energy management, energy auditing, energy fund and has also outlined the role and scope of state institutions and several other organizations dealing with energy efficiency. Even-though the directive is adopted it needs a lot of efforts towards its implementation. While the 1st NEEAP was facile in its approach and did not appear to have a rigid methodology in evaluating how much energy has actually been saved, the 2nd & 3rd NEEAP 2017-2020 -tackles the energy issues prevailing in Albania's environment.

Directive 2010/30/EU “On the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products” The purpose and objective of this directive is to promote a harmonization of national measures in relation to end-user information, particularly by means of labeling and product information. With regard to labeling, the Administrative Instruction on the labeling of Energy Related Products transposes the requirements of the above titled directive. Products across Albania have been labeled adequately with the necessary information for end-users to deduce which product uses less energy and which uses more. (DIRECTIVE 2010/30/EU, 2010)

Directive 2010/31/EU “On the energy performance of buildings” The purpose of this directive is to lay down a minimum standard of requirements for buildings and their energy performance. It seeks to promote measures that improve the energy performance of buildings by taking into consideration cost-effectiveness, and outdoor as well as indoor climate requirements. Implementing this directive has remained a serious challenge as exemplified by the unsatisfactory actions that have not seriously realizing in practice. The Law outlines primary decrees related to a minimum standard of requirements for buildings, specifically, it posits in Chapter 10 that building energy certification shall be mandatory under these circumstances. The Draft Law on Energy Performance of Buildings (PEN), which transposes Directive 2010/31/EU (the "Energy Performance Building Directive") is expected to be adopted soon, representing the path towards its implementation and better harmonization with Energy Efficiency Law.



EXAMPLES FROM EUROPE



IV. EXAMPLES FROM EUROPE

- CROATIA

In 2004, Croatia established the Environmental Protection and Energy Efficiency Fund (hereafter EPEEF) as an extra budgetary entity with the aim of strengthening the financial delivery mechanism of energy efficiency goods and services. Particular focus is afforded to a sustainable use of energy, renewable energy sources, and the protection and improvement of the environment. The fund can support up to 40% of the total investment depending if the party fulfills the conditions set out by the 2003 Act and Statute of the Environmental Protection and Energy Efficiency Fund. From 2005 till 2011 the EPEEF has provided loans, grants, and subsidies, totalling 148.6 million EUR. Projects that received funding included the sustainable building sector, improving heating and lighting systems, energy efficient building envelopes, and optimizing combustion systems.

The EPEEF is replenished through earmarked taxes and a diversified charge system tackling the main pollution and emission sources. These include, but are not limited to, taxes on air pollution, water and waste charges, used tyres, and end-of-life vehicles. These measures are enforced and upheld by judicial (criminal charges / misdemeanor) and economic (gradually increasing fines) non-compliance measures. By gradually increasing the severity of the punishment for a habitual lack of compliance asserts poignantly a clarity regarding the importance of these measures in the eyes of the judiciary and administrative institutions as well as the government itself. Indeed, as a result of such methods of enforcement and also through the opportunities afforded by the EPEEF, the Croatian industrial sector's energy efficiency increased by over 20% from 1995 to 2010.

- ESTONIA

Established in 2009, the Estonian KREDEX Fund is known as the first revolving loan fund among the European financial institutions. Through its dedicated renovation loans, KREDEX targets apartment buildings constructed before 1993 by providing preferential loans and guarantee/grant schemes for those interested. Its sources of funding include international donor agencies, European developmental funding, especially from the European Regional Development Fund (approx. 17.7 million EUR) (hereafter ERDF), and domestic tax levies. In only four years, KREDEX managed to distribute 534 loans for 515 buildings while simultaneously infusing supportive investments, both respectively totaling 129.8 million EUR. Estonia's revolving loan fund is characterized by clear and established criteria and funding eligibility, and as a result is considered a successful example of a financial instrument for the implementation of energy efficiency measures in buildings with almost no unsuccessful projects reported. Its success lies in its ability to require final recipients (mostly done by random) of loans and/or grants to provide supporting evidence for the annual energy consumption in the form of invoices. Indeed, before the loan/grant is awarded, KREDEX and the awardee sign a regular reporting contract that consists of the final recipient accurately reporting their metered annual energy consumption for heat and hot water. Additionally, a key factor to Estonia's revolving loan fund success is its framework involving local banks as the driving force behind the creation of an energy efficiency market. Specifically, through the dispersion of preferential loans with fixed interest rates of 4.01% for the first 10 years, with a maximum of 20-year payback, local banks have had a key part to play in the implementation of energy efficiency measures.

Their desire to maintain a market share in this thriving and innovative market-space has kept local banks motivated and at times supporting marketing and awareness campaigns to inform the public of the need to renovate, what the loan requirements are, how costly renovation is, etc.

- BULGARIA

Established by the Energy Efficiency Act of 2004, the Bulgarian Energy Efficiency Fund (hereafter BEEF) is a revolving loan scheme that is designed to promote sustainable commercial financing for energy efficiency projects. As with previous examples, the fund is financed by fees levied from environmental taxes and used to fund clients that are seeking to implement energy efficiency measures. In order to kick-start BEEF, the Bulgarian as well as the Austrian government allocated \$1.8 million and \$2 million, respectively, towards its sustainability. Due to its flexible structure, BEEF has had the dual-capability of advancing energy efficiency measures through its technical expertise while simultaneously offering financial products for those involved in the energy efficiency market. Among a diverse range of projects, BEEF has financed improvements in the industrial, commercial, and residential sector. It also had a key role in the refurbishments of public sector buildings such as schools, universities, cultural facilities, and healthcare facilities. By the end of 2010, the fund had awarded approximately 81 loans at a total sum of \$16 million, which combined with the total investments made by all parties involved comes to \$24 million. Launched in 2005, Bulgaria's Residential Energy Efficiency Credit Line (hereafter REECL) represents an extension to the revolving loan scheme, and is similar in that it offers the same financial delivery mechanism, namely, low interest rate loans and grants. In similar vein to Estonia's KREDEX, it utilizes commercial banks in order to deliver its energy efficiency products to end-users. Additionally, it incentivizes grant seekers by attaching the number of measures implemented and the projected costs of the project with the relative size of the grant.

- UNITED KINGDOM

With a loan volume of £115 million, the independent and publicly funded organization – Salix Finance, acts as the fund manager for funds disbursed by the United Kingdom Department for Energy and Climate Change (hereafter DECC). These funds are delivered through Salix Finance as 100% interest-free capital exclusively to the public sector to improve its energy efficiency and reduce their carbon emission. One of its funding programmes – the Recycling Fund of Salix – has already funded over 7,400 projects collectively worth £115 million, resulting in over £456 million in monetary savings, and with an average project payback of 3.5 years. It should be noted that the recycling fund is analogous to the revolving fund discussed throughout this policy paper. Specifically, the Recycling Fund of Salix provides long-term interest-free loans to selected energy efficiency projects and, once there are empirically established savings done through monitoring and energy auditing, those then are rerouted into the fund, hence recycling fund. Another example of a financial initiative, funded by the housing association (Radian partly by grants from the ERDF, is the Revolving Retrofit Guarantee Fund (hereafter RRGF) which has as its focus the deep retrofitting of a small number of domestic properties for the purpose of demonstrating and raising awareness of such measures and their energy

saving potentials. From 2009 till 2012 around €1.39 million were injected into projects that resulted in 70-89% energy efficiency improvements. This astounding figure has had the effect of spurring a local supply chain of energy efficiency services and has reduced the risk for commercial loan providers.

- DELFT MUNICIPALITY, NETHERLANDS

Delft Municipality initiated the energy efficiency commitment through establishing the Local Energy Action Plan in 2003. The aim of the plan was to achieve the targets by 2012 comparing with 1990. The main targets was to (i) reduce the energy consumption of Delft by 15%, (ii) reduction of carbon dioxide emissions by 15% and 5% of energy demand be covered from renewables. During that time, the municipality didn't provide financial instruments for homeowners for the existing housing stock. To cope with energy efficiency targets the municipality established in 2003 the "Delft Climate Investment Fund". The budget allocated was around 12 million euro and was available for a period of 9 years targeting office buildings, industrial buildings, new housing etc. At the beginning, the "3E Delft Climate plan 2003-2012" has the focus only on the new housing buildings and renewable energy. Targeting only new houses was for budget reasons and for stimulating the new highly energy-efficient houses. (Cicmanova, Jana 2017)

The municipality council decided to extend the budget limit also for existing houses. To solve this issue, in 2006 the city council established a new financial scheme that would motivate the homeowners and tenants to invest in their house for energy efficiency measures. This financial instrument was available for organizations, associations and NGOs. Taking into consideration that the DCIF regulations didn't allow to subsidize the private housing sector, a Delft Revolving Fund and a soft Loan Scheme was established.

In 2010, other actors were joined the initiatives. Delft Municipality started a new program to motivate the homeowners to retrofit their homes. A variety of instruments was established in partnership with the local energy agency. Part of the program was the initiative to raise the awareness of citizens to energy renovation. (Cicmanova, 2017)

In 2003 the Delft Municipality signed up the "Local Energy Action Plan". According to the plan the Municipality was obliged to fulfill the requirements as follows: Reduction of final energy consumption by 15% and reduction of emissions by 15%. During that period in Delft Municipality was not any financial instrument for energy efficiency investment available.

To tackle this issue the Delft Municipality in 2006 set up an innovative financial scheme for energy efficiency investment based on the revolving fund and soft loans scheme. The environment to set up the financial instruments enables Delft Municipality to implement the scheme. (Cicmanova, Jana et al. 2017) During that period the municipality initially faced many challenges to set up the loan properly. A major challenge for the municipality was to convince the financing department to establish the revolving fund because according to the department it would make the organization management more complicated. The source of money for establishing the "Delft Revolving Fund" came from DCIF (Delft Climate Investment Fund) in the amount of 200,000 Euro. During the period of time the fund got growing reaching the value of 500,000 euro by 2013. In 2015 in the revolving fund was merged also other funds such as the fund for old buildings, a mortgage for homeowners that are buying the house for the first time etc. The amount of budget in the "Delft SVn Fund" was estimated around 3.5 million euro. The Revolving Fund scheme now is part of the "Delft SVn Fund", which is now managed by the Bank and not from the Municipality. (Cicmanova, Jana et al. 2017)

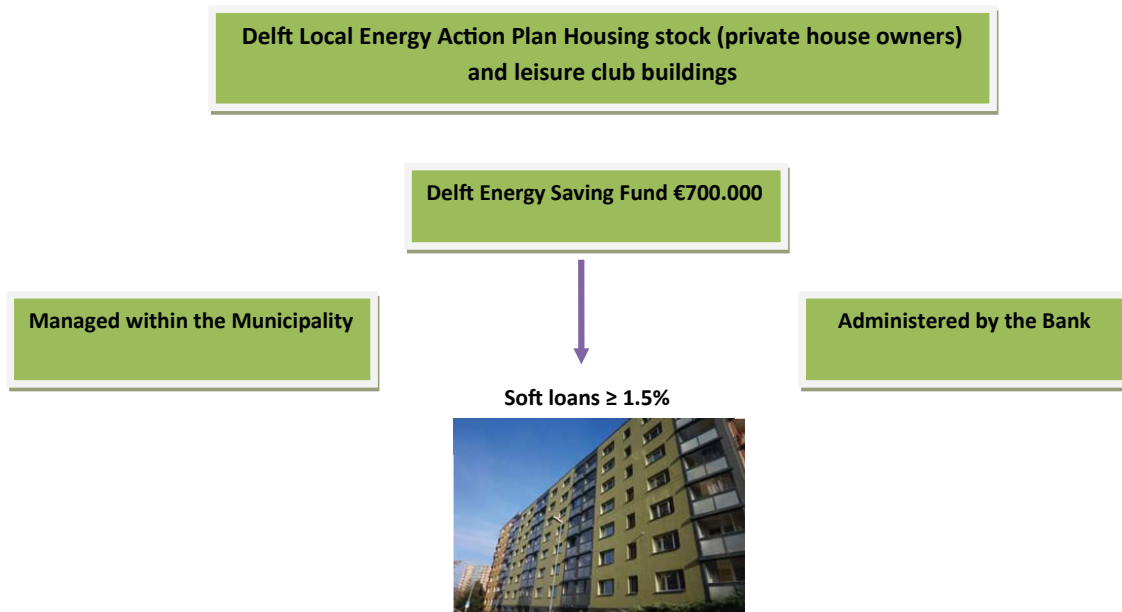


Figure 2: Energy Financing Scheme in Delft Municipality (Cicmanova, Jana 2017)

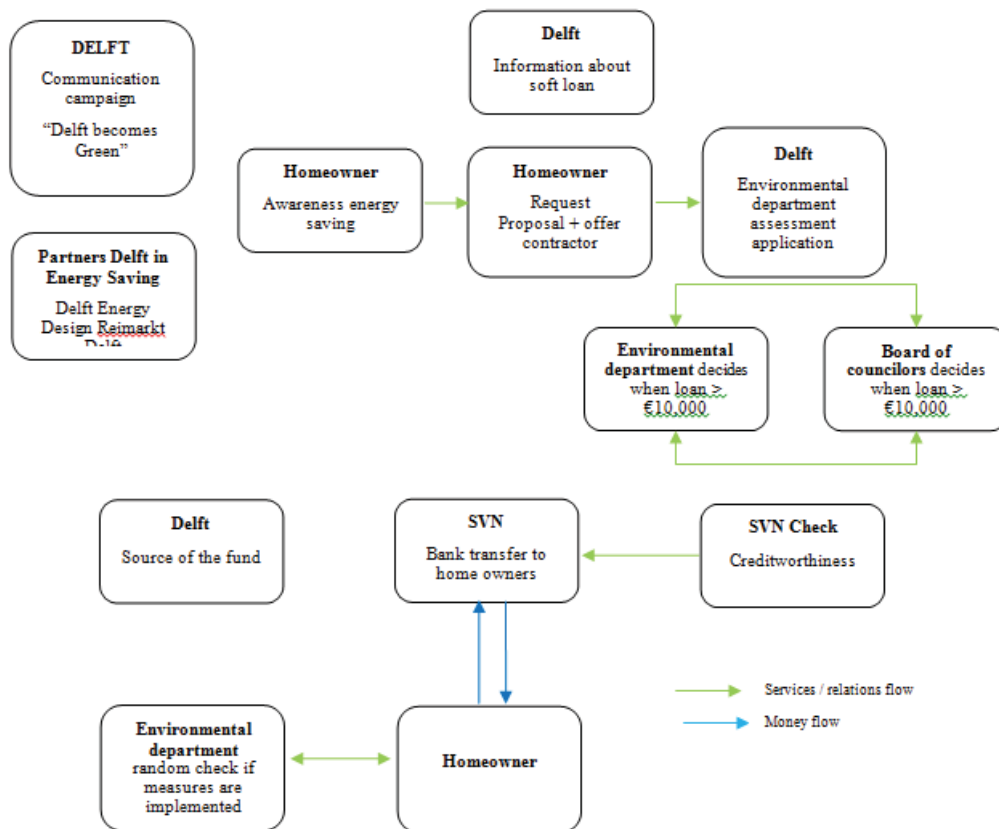


Figure 3: Revolving Fund and soft loan Scheme (Cicmanova, Jana 2017)

Table 1: Comparison table among case studies

Characteristic	Country			
	Croatia	Estonia	Bulgaria	United Kingdom
Name of Fund	Environmental Protection and Energy Efficiency Fund (EPEEF)	Estonian KREDEX	Bulgarian Energy Efficiency Fund (BEEF)	Salix Finance
Source of Funding	Earmarked taxes and a diversified charge system including but not limited to, taxes on air pollution, water and waste charges, used tyres, and end-of-life vehicles.	International donor agencies, European developmental funding, and domestic tax levies	Fees levied from environmental taxes	Funds disbursed by the United Kingdom Department for Energy and Climate Change
Dedicated Energy Efficiency Fund	No, also Environmental Protection	YES	YES	Partially, Funds also dedicated to carbon reduction, including RES Deployment. The Revolving Retrofit Guarantee Fund is only dedicated to EE
The Fund provides loans, grants or subsidies.	Yes	Yes	Yes	Yes
Collaborating with Banks to deliver funds.	NO.	Yes, in providing low interest Loans.	Yes, Local Banks.	NO.
Revolving Scheme	NO	YES, Revolving loan fund	YES, revolving loan scheme	YES, Recycling Fund
ESCOs Participation	Not Clear	Not Clear	Not Clear	Not Clear
Other Parallel institutions besides the Fund	NO	NO	Residential Energy Efficiency Credit Line (REECL)	Yes, Revolving Retrofit Guarantee Fund



BARRIERS FOUND AND SOLUTIONS SUGGESTED



V. BARRIERS FOUND AND SOLUTIONS SUGGESTED

- What is a barrier in Energy Efficiency?

A barrier is a mechanism that prevents the financing of a project that is sustainable from economic and energy point of view. (Sussex University, 2012)

To estimate empirically the presence of barriers we need to know to give answer some questions:(Sussex university, 2012)

1. **“What is the barrier?** e.g. hidden costs, risk, lack of capital, lack of information, inadequate financial incentives etc”.
2. **“Who or what is it an obstacle to?:** e.g. firms, public organizations, departments within organizations, individuals”.
3. **“What does it prevent?** e.g. purchase of more efficient equipment, retrofitting insulation to a building, establishing a monitoring & targeting scheme”.

According the literature there are three types of barriers classified in three groups:
A review of the literature leads to a broad classification of barriers into three groups: i) economic; ii) Social; iii) Legal and Regulatory (Sussex University, 2012)

Table 2: An overview of Energy Efficiency barriers

Category	Sub-Category	Barrier	Description	
Financial	Behavior	Heterogeneity	The project is not viable based on cost investment.	
		Hidden costs	The project in its self may contain addition cost not reflected in the total project cost.	
		Risk	There might be a risk in the investment. Risk of failure, not realization of expected savings etc.	
	Market Failure	Access to capital		There are not supportive incentives from the government for EE. Banks might be reluctant to finance and might provide expensive loans and too much assurance.
			Imperfect information	Lack of knowledge to take right decision for investment.
			Adverse selection	The information is contained only from one side(i.e only to the seller and the buyer does not possess the information)

		Split incentives	The person cannot benefit from the investment
Social	The human dimension	Form of information	Lack of energy efficiency awareness may lead to the not realization of the investment. This is not a barrier but a variable.
		Credibility and trust	The information is not reliable from the customer point of view
Legal		Legislation	There are regulations barriers due to the laws not properly clear and well oriented for EE implementation

- What is the most common solution to overcome the financial barriers in Energy Efficiency?

ENERGY REVOLVING FUND

According (Sam, 2009) "An RLF is a source of money from which loans are made". Most of the RLF programs have specified payback period according the types of project for financing. The money is allocated in the RLF through repaid loans by the borrowers. Is a continuous process, in the form of circle where the money is given to the borrower and following the line are given back through in the fund. For that reason is called the revolving fund. Most of the cases the interest rates and other additional fees goes for administration or operating cost to the institution who is responsible for managing the fund. The revolving fund scheme is widely used in different programs such as safe drinking water, renewable energy and energy efficiency. Most of the cases the RLF is administered by the government or other organizations willing to bring a position change in their community or vulnerable peoples.

(Grüning, Christine et al)

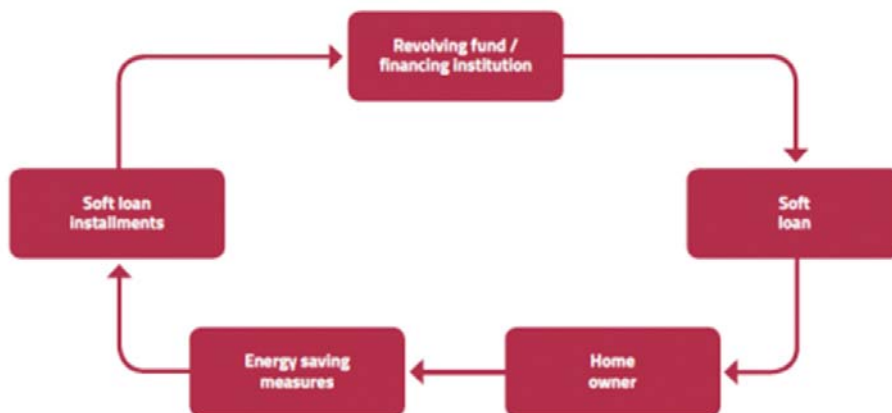


Figure 4: Revolving Fund Scheme

- Findings of the study

Altogether 12 experts responded to the questionnaire. 7 of the respondents were male and 5 were female and the average age of the respondents was 42.2 years. All the 12 experts responded to each question and therefore it was assumed that they have been thorough in answering the questions and that the responses are valid. First, the respondents were asked to identify main barriers for energy efficient building refurbishment in Albania by assessing a set of barriers on the scale from 1 to 5. The results range from legal and regulatory barriers which does not go into detail about how the legal framework will be operationalized, to high initial investment cost regarding energy efficiency improvements and finally lack of financing opportunities that are perceived as the most significant barriers. Barriers such as outdated norms and building codes and lack of information regarding energy efficient refurbishment measures and their effects/benefits were seen as less important barriers. However, the differences in the scores given to the barriers are rather small.

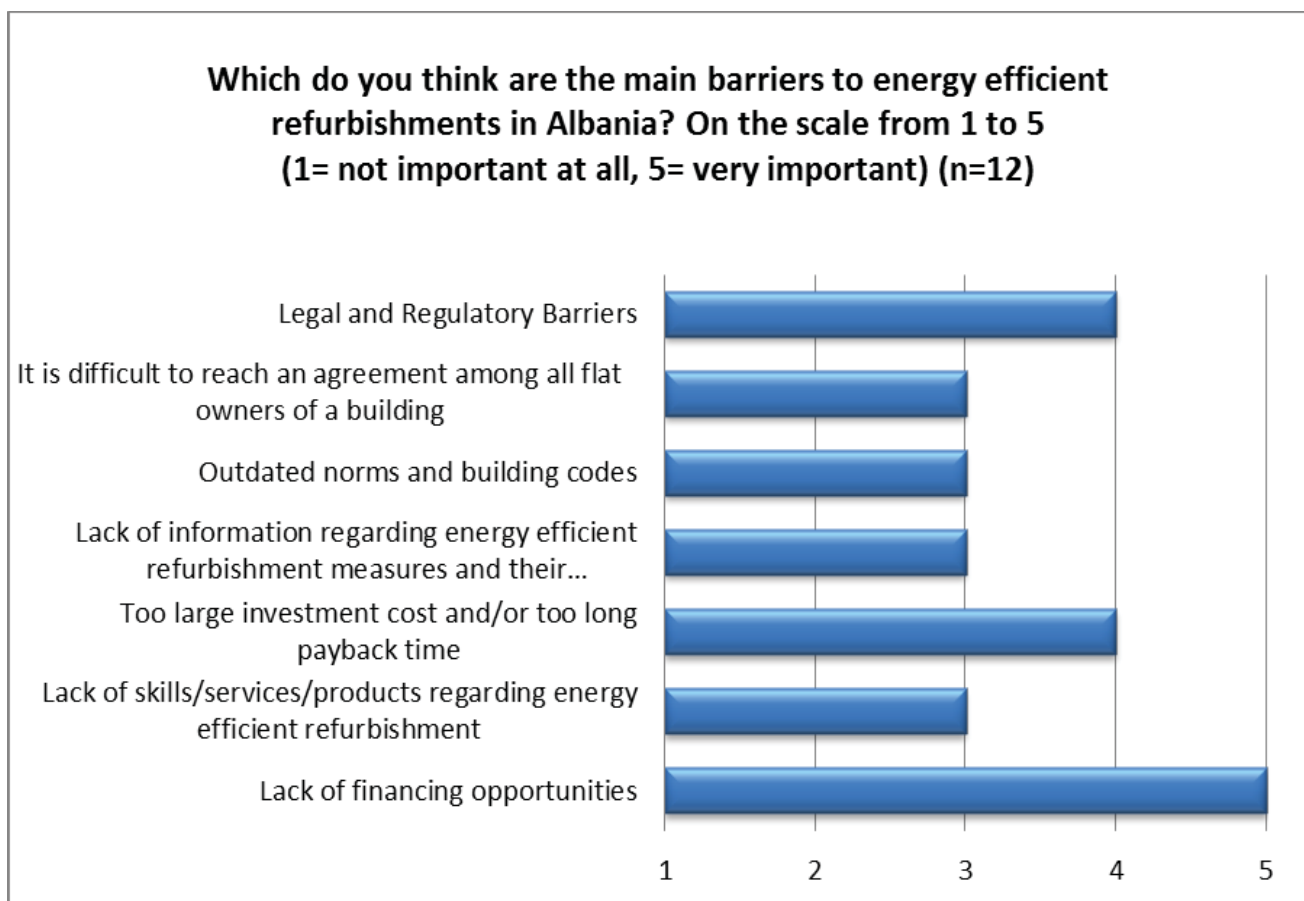


Figure 5: Main barriers classified by the respondents according the importance

The lack of financing opportunities is the main barrier highlighted by the respondents. It is important to emphasize that today in Albania there is no financing opportunities that may support energy efficiency investment beside some local banks that provide loans but still are not very attractive for the clients taking into consideration interest rates and difficulties during the process. Additionally, even-though the framework laws are in force and well adopted sub-legislative measures are still to be approved and they hinder the realization of the law in practice from public and private companies. According the respondents the high initial cost for energy building renovation is one of the main barriers that inhibit the investments from the clients. The interview also highlighted that the majority of private and public entities are not fully aware about the importance of energy efficiency investment such as thermic comfort, energy savings and cost effective intervention. Additionally, an obstacle for investment comes as a lack of mutual understanding among citizens to joint efforts on investment in energy efficiency.

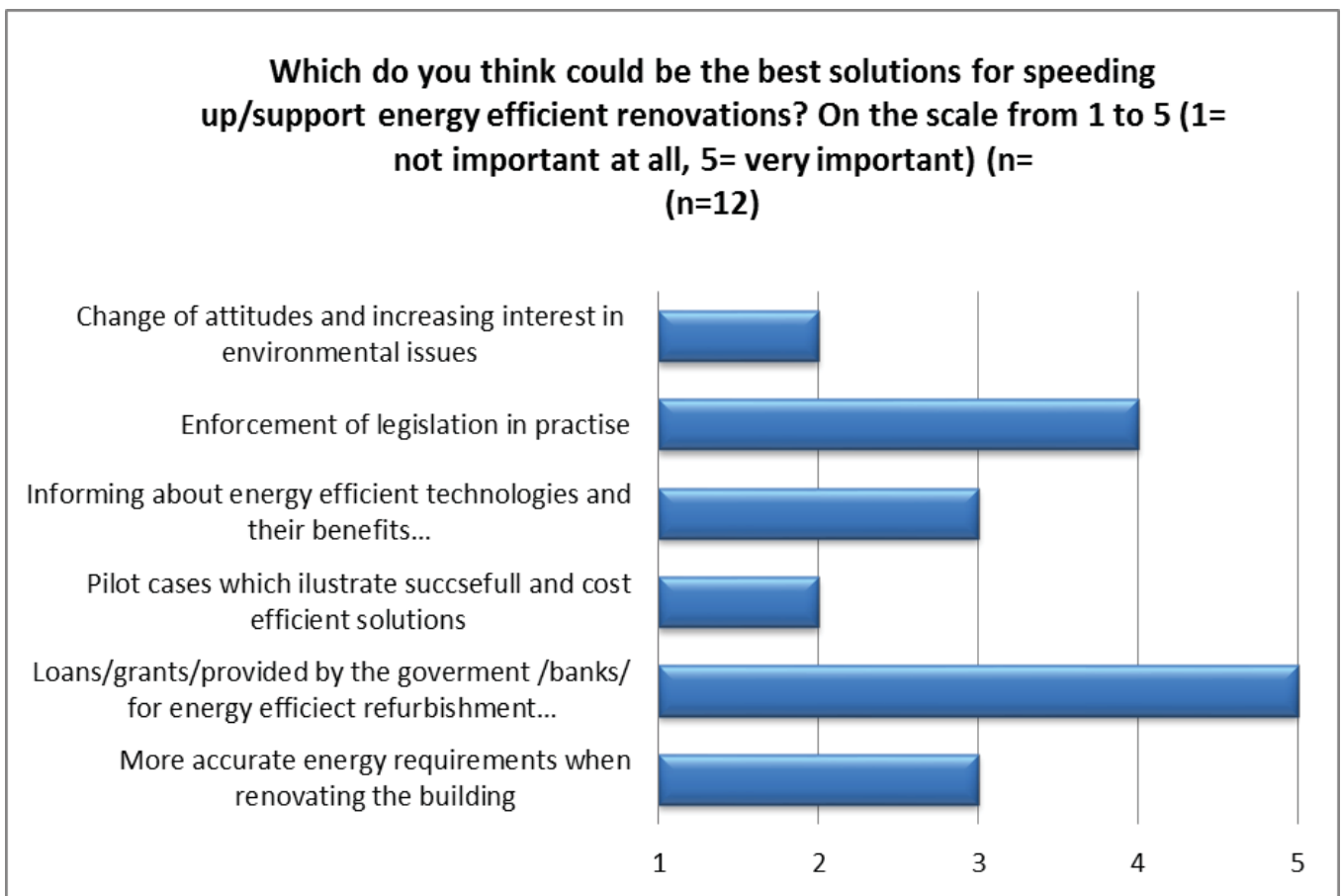


Figure 6: Most possible solutions for speeding up Energy Efficient renovations in Albania

According to the respondents the necessity of financial support from the government and other alternative innovative schemes is one of the crucial elements to overcome the financial barriers. The government must immediately facilitate the operation of Energy Efficiency Fund and diversify the source of financing by embracing even alternative financing schemes like the Revolving Fund. Based on the research today, loans for Energy Efficiency have been provided by banks such as Intesa SanPaolo Bank, Credins Bank, Besa Fund, NOA, and Societe Generale Albania Bank (supported from IFC, World Bank). (IFC, 2015) Still their efforts have not been sustainable due to lack of long term funding. The main barrier is to secure long-term financing by looking at innovative financial schemes easily adopted in Albania.

Another important element that is seen as an important solution is the support of the public sector (municipalities) by mobilizing their resources to enhance the energy efficiency investment. Today, municipalities are spending huge amount of money that goes to cover the energy cost for public buildings such as kindergartens, schools, etc. A lot of efforts are necessary to be done in order to look to the opportunities of financial schemes. Even though the law on energy efficiency and energy performance in building (LAW Nr. 124/2015, 2015); (LAW Nr. 116/2016, 2016) are in force, there is a lack of implementation since the operation of Agency of Energy Efficiency, Energy Efficiency Fund and other operational mechanisms are still not in place. According the respondents there is a need for enforcing the law through energy implementation requirements in building environment. There is a need to promote and to make more aware the public and private clients about the importance of using energy efficiency technologies and their benefit in terms of savings and reduction of carbon footprint.

- Albania's Roadmap towards an Energy Efficiency Fund

How challenging is the prospect of establishing an energy efficiency fund in Albania and, more importantly, to what extent can it be successful? There are disquieting aspects to Albania's state of affairs; particularly worrisome is the volatile nature of doing business, misappropriation of funds etc. In a public disclosure document assessing the implementation status and results of the Green Climate Fund Project the substantial risks identified were political governance, macroeconomic policy, technical design of project or program, institutional capacity, and transaction cost. Establishing an energy efficiency fund as an extra-budgetary and independent entity has the potential to address, albeit if not done correctly augment, the risks associated with Albania's landscape. If established based on a careful deliberation among stakeholders and a contextually sensitive design, the fund may yield several advantages. It would address the lack of awareness present in Albania regarding energy efficiency products by investing in educational campaigns while simultaneously incentivizing commercial banks, ESCOs, and potential funders to compete for end-consumers and broaden their market share.

Through it, the low priority afforded to energy costs in management decision-making would be tackled by inspections, energy audits, and by monitoring the progress of borrowers and grantees in a systematic and standardized manner. Once established, the fund would act as a central hub for energy efficiency projects and, while maintaining its independent status, would be the governments helping hand in the implementation of energy efficiency policy. Indeed, with such a specialized entity one would see a clear improvement in bureaucratic handling and less paperwork once energy audits are conducted in a standardized way. Similarly, voluntary energy efficiency programs may gain a support boost leading to lower levels of energy demand in end-users. (Ahmetaj, 2015)

There is a sufficient legal precedence and justification for the establishment of an energy efficiency fund in Albanian. For example, According Article 52 of (DIRECTIVE 2012/27/EU) specifies that:

“The financing facilities could in particular use those contributions, resources and revenues to enable and encourage private capital investment, in particular drawing on institutional investors, while using criteria ensuring the achievement of both environmental and social objectives for the granting of funds; make use of innovative financing mechanisms (e.g. loan guarantees for private capital, loan guarantees to foster energy performance contracting, grants, subsidised loans and dedicated credit lines, third party financing systems) that reduce the risks of energy efficiency projects and allow for cost-effective renovations even among low and medium revenue households; be linked to programmes or agencies which will aggregate and assess the quality of energy saving projects, provide technical assistance, promote the energy services market and help to generate consumer demand for energy services“

Furthermore, Chapter V of Albanian’s Law on Energy Efficiency legally supports and in a sense foreshadows the presence of an energy efficiency fund. It states the operational and governance structure of the fund and emphasizes the source of financing that is mainly based on traditional models rather than innovative financing schemes that enable the sustainability of the fund.

There is a clear legislative pattern which asserts that the introduction of an energy efficiency fund within Albanian’s realm is plausible theoretically, but whether it is possible in practice is an entirely different question. This is a matter dependent upon the willingness of the government to promulgate an agreed policy position on the criteria for establishing an energy efficiency fund as an extra-budgetary entity. The criteria should outline the structure of the fund, its governance and financial management, legal and economic status, and the intervals of internal and external reviews. A framework should be passed exclaiming the exclusivity of this fund and the inappropriateness of using it as a legal precedence to set up similar or other extra-budgetary entities, a measure designed to limit the number of funds and the impact these have on the central budget and fiscal soundness of the country. Most suitable for Albanian’s case, the energy efficiency fund should be a revolving fund established as an independent organization corporation, or NGO, with its own legal status. Financially, the energy efficiency fund would gain the initial revenue from environmental taxes and levies – (currently however these are directly routed to the central budget) – and international funding agencies such as EBRD or the World Bank. (Ahmetaj, Gent, et al. 2015)

Principally, an established revolving energy efficiency fund in Albania would be structured something along the following lines:

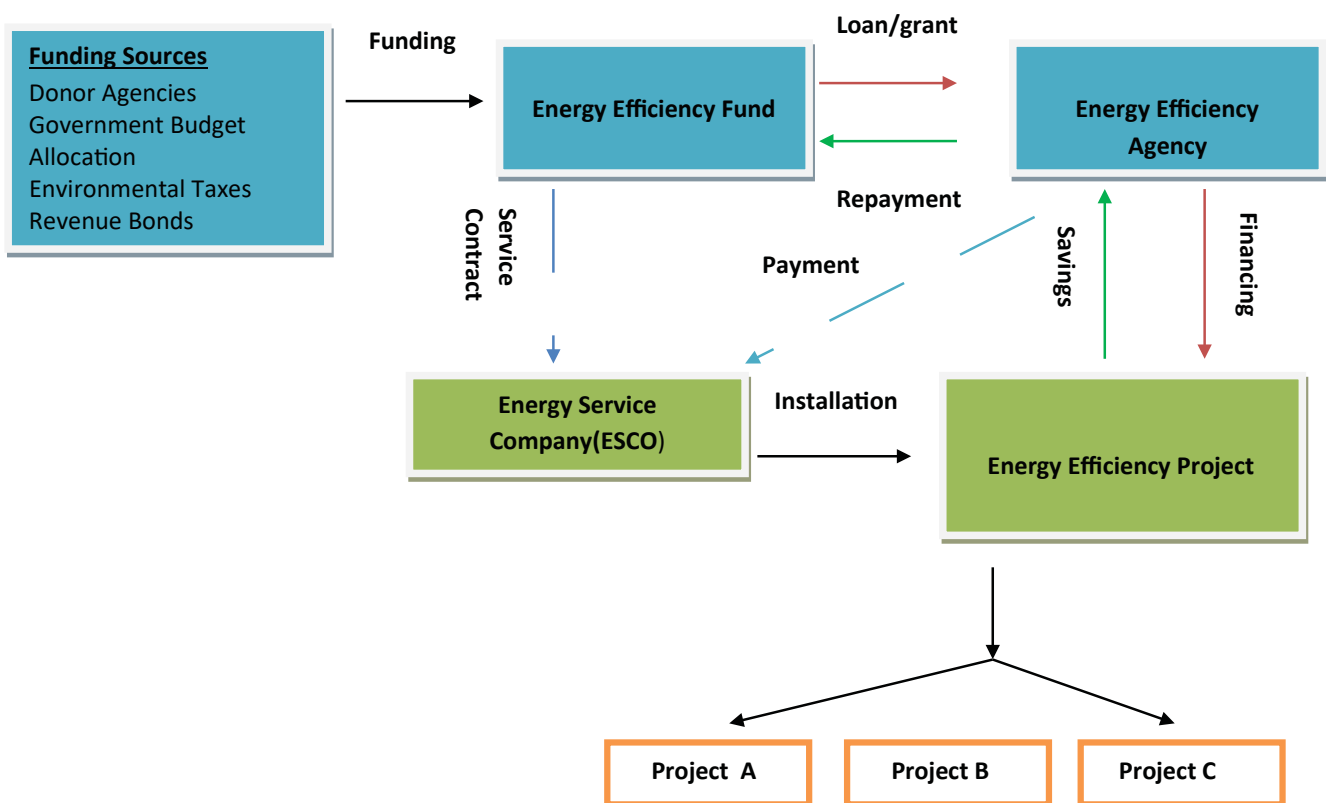


Figure 7: Conceptual Model for Albania Energy Efficiency Fund



CONCLUSIONS AND RECOMMENDATIONS



VI. Conclusions and Recommendations

This paper studied non-technical barriers to energy renovations of buildings and policy instruments which could be used to overcome these barriers. Based on an in-depth review of background information on Albanian residential buildings and a questionnaire interviews conducted with a group of Albanian Energy Experts, barriers and potential policy instruments in the Albanian context were analyzed. Standards, Legislation Enforcement & Innovative Financial Instruments were seen as by far the most effective tools by the interviewed experts. The role of the government was strongly highlighted regarding information dissemination, promoting renovation as well as providing funding for renovations. The interviewed Albanian experts held slightly varying views about the barriers and effective policy measures but on average they did agree on the main barriers and effective policy measures (summarized in Figure 5). Some experts thought that lack of information is not a significant barrier but instead, lack of willingness to invest in energy-efficiency was seen as the main challenge. Most interviewed experts shared the view that the government has a major role in speeding up renovations in the country and that progress is not likely to take place without government's will and initiative. In this paper we examined barriers to energy efficiency improvements in Albanian housing stock which is a topic that has so far remained rather unstudied in spite of its high importance. Hence, we shed a light on issues which are highly relevant considering the world-wide need for reduction of energy consumption. Although our paper provides new and valuable information, this topic should however be further studied. We studied the topic from the viewpoint of a few Albanian energy experts. In future it is important to gain deeper understanding of residents of Albanian buildings with poor energy performance. Therefore, a wide survey study would provide useful insight to the problems and motivation regarding energy improvements. Following are some brief recommendations regarding the Energy Efficiency Fund:

- **Developing reliable and sustainable funding sources** necessitates the government and parliament to support the established fund through developing innovative financial schemes such as Revolving fund combining with third part actors (ESCOs) and other relevant actors.

- **Unlock the Energy Efficiency Fund** through speeding up the legislative and technical procedures in order to make it available to beneficiaries. The Ministry of Energy must further work in the governance of the EE Fund by hiring people to be able to operate the fund and promote to third parties. The required skills and knowledge of know-how are energy efficiency project management, project financing, energy services, investment management, credit and risk assessment, and loans disbursement and recovery. Overall, staff must understand that the fund's objective is that cater to the needs of, and be responsive to, the public and private sector. The EEF shall work in close collaboration with the EE Agency.

- **Defining the major financial products** such as grants, preferential loans, and ESCO energy performance contracting. These financial delivery mechanisms are viable in Albania's context and can be used through a financial intermediary such as an ESCO or a commercial
- **Developing and documenting monitoring, reporting, and evaluation** procedures and approaches is possibly the pillar and most important aspect of an energy efficiency project or measure;

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