Europe and Central Asia
Energy Efficiency Financing Option Papers for Kosovo

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The team was led by Jas Singh (Senior Energy Specialist and Task Team Leader) and included Dilip Limaye (Lead Consultant), Joseph Melitauri (Senior Operations Officer), Rhedon Begolli (Energy Specialist), Yasemin Örücü (Energy Specialist), Aditya Lukas (Junior Professional Officer), Selma Zahirovic (Consultant) and Dardan Velija (Consultant). The final report was written by Jas Singh and Dilip Limaye. The team would like to acknowledge contributions and valuable feedback provided by Feng Liu, Jonathan Sinton, Pedzi Makumbe, Ivan Jaques and Ranjit Lamech.

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A Roundtable discussion was also held on April 4, 2016 at MED to discuss and debate some of the report’s findings and recommendations.
EXECUTIVE SUMMARY

Why Energy Efficiency is Important for Kosovo

As a result of continuing economic growth in Kosovo, the demand for electricity is outstripping the supply, and Kosovo has to rely on unreliable electricity imports. Also, Kosovo’s high reliance on firewood to meet heating needs is leading to adverse environmental, economic and health impacts. Therefore, energy efficiency (EE) should be a critical component of Kosovo’s energy strategy to sustain its economic growth while meeting its global commitments for climate change mitigation and environmental sustainability. Kosovo’s energy intensity, in terms of energy use per unit of gross domestic product (GDP), is more than three times higher than that of Organization for Economic Cooperation and Development (OECD) countries, showing substantial potential for EE improvement. Further, Kosovo’s energy use per capita is about one-third of OECD countries, so its energy intensity is likely to increase further as incomes rise.

EE Potential in Public Buildings

The public sector in Kosovo (which includes central government and municipal buildings and facilities, including street lighting) is a large user of energy. Recent studies conducted by the World Bank have estimated that there are about 1,970 public buildings in Kosovo with total floor area of approximately 2.3 million square meters (m²). Studies and audits conducted by the World Bank have demonstrated the large savings potential in public buildings (62 percent in central government buildings and 54 percent in municipal buildings), that can be achievable with paybacks of about 5 to 7 years. The investment requirements have been estimated to be €57 per m² in central government buildings and €70 per m² in municipal buildings. Using these estimates the total investment potential for cost-effective EE would be about €156.2 million (€42.5 million in central government buildings and €113.8 million in municipal buildings). Energy efficiency in the public sector is also envisaged in Kosovo’s 2nd National Energy Efficiency Action Plan (NEEAP).

Global Experience with Financing EE in Public Buildings

Barriers. Despite the economic viability of EE, numerous barriers often prevent it from happening on its own. These can include:

(i) policy and regulatory barriers, such as budgetary and borrowing limitations, restrictive budgeting procedures, public procurement rules, low energy tariffs, and lack of building and construction codes and enforcement;
(ii) underdeveloped market conditions, including limited demand for EE goods and services, high project development costs, limited experience and capabilities of EE service providers, and limited access to commercial financing;
(iii) institutional constraints, such as limited incentives of public agencies to invest in EE, limited awareness of and knowledge about EE opportunities, lack of credible data, low service levels, lack of implementation capacity, etc.; and
(iv) lack of commercial financing, including unattractive financing terms, overcollateralization, high transaction costs, and informational and behavioral biases among financiers.

Financing models. There are a number of financing models that countries have used to support
Options for Financing Energy Efficiency in Public Buildings in Kosovo

public EE programs. These range from budget financing or grants to advanced project or energy service company (ESCO) financing, as shown in the “financing ladder in Figure ES1. Selecting the most suitable option depends on a number of factors, including the current legislative and regulatory conditions, market maturity, state of the local EE service industry, and technical and financial capacity of public agencies to undertake EE. Once the option is selected, it must then be carefully designed to suit the local market characteristics. Consideration should also be given for mechanisms capable of serving multiple market segments (e.g., central government agencies, creditworthy municipalities with implementation capacity, creditworthy municipalities without implementation capacity, and non-creditworthy municipalities). Over time, as local markets evolve, the goal should be to move up the ladder to more commercial financing mechanisms.

Figure ES1. Options for Financing Public EE in Kosovo

For a country such as Kosovo that has limited implementation experience and an underdeveloped EE service/ESCO market, financing mechanisms in the middle rungs of the ladder were deemed more appropriate. (However, utility on-bill financing was not deemed viable, because the local distribution utility does not have the regulatory authority, capacity or interest in offering such services at present.) Based on the analysis conducted, three appropriate models were identified for Kosovo. These include:

1. **Budget financing with capital recovery**. Under this option, the Ministry of Finance (MOF), or another parent budgeting agency, provides budgetary resources necessary for an EE investment and then recovers the investment by reducing future budgetary outlays (thus capturing the energy cost savings). This is also known as the ‘budget capture method’. This can work for both central and municipal entities and, since there is almost no risk of nonpayment, this can work for municipalities without credit histories as well.

2. **Energy efficiency revolving fund (EERF)**. An independent financing institution, called an EE revolving fund or EERF, is created using public funds to provide financing to public sector EE projects. Since both the borrower and lender are publicly owned, such funds
may often offer lower-cost financing with longer tenors (repayment periods) and less-stringent security requirements than typical commercial loans. As loans are repaid from energy cost savings, they can be redeployed to new projects, thereby revolving over time.

3. Public ESCO. Established by the government, a public (or super) ESCO functions as an ESCO for the public sector market, entering into energy performance contracts and outsourcing actual project implementation to small, private ESCOs and other EE service providers. A primary function of the public ESCO is to facilitate access to project financing by developing relationships with local or international financial institutions. The public ESCO may also provide credit or risk guarantees for ESCO projects, or act as a leasing or financing company to provide ESCOs and/or customers with EE equipment on lease or on benefit-sharing terms.

(ESAs). Energy service agreements are a more recent product that some EERFs have now begun offering in addition to traditional loans. They can be very useful for public agencies that typically lack capacity to borrow funds and implement EE projects. (See Box ES1.)

<table>
<thead>
<tr>
<th>Box ES1. Energy Service Agreements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under an ESA, the financier (an EERF, in this case) offers a full package of services to identify, finance, procure, implement and monitor EE projects for clients. The client is only asked to pay what it is currently paying for energy (i.e., its baseline energy costs), from which the financier makes the new (lower) energy payments and recovers its investment cost and associated fees until the contract period ends.</td>
</tr>
<tr>
<td>The figure on the right illustrates the basic idea of a client’s cash flows under the ESA, with payments equal to their baseline energy bill. This allows them to maintain a constant cash flow while retaining their energy cost savings for the duration of the ESA. In some cases, the contract duration is fixed; in other cases, the contract is terminated after an agreed level of payment has been made, which encourages the client to save more energy.</td>
</tr>
<tr>
<td>For public clients, ESAs are generally not viewed as debt, but rather long-term service contracts, thereby allowing financing of central government entities that are typically not allowed to borrow, and municipalities that may have already reached their debt limits or otherwise have borrowing restrictions. This provides a dual advantage to the client of being relatively simple to implement with very little risk. It also helps ensure that the public client is able to retain the energy cost savings for the duration of the ESA.</td>
</tr>
</tbody>
</table>

**Recommendations**

Regardless of the option selected, the Government of Kosovo (GOK) will need to identify the potential sources of financing, implement the needed legislative and regulatory changes, build implementation capacity, and leverage private sector participation. Each of the proposed models have some advantages and limitations. GOK will need to consult with the relevant stakeholders, select the most appropriate model. The next steps would include developing the detailed design and implementation plans for the selected option.

Based on the analysis and the current state of the Kosovo market, the World Bank recommends creating a dedicated Kosovo EERF (KEERF) for the public sector. KEERF would be
Options for Financing Energy Efficiency in Public Buildings in Kosovo

government-owned new entity, focusing its initial efforts on financing EE renovation of municipal and central government buildings. This would fill a critical gap in public sector EE financing in Kosovo and help address perhaps some of the most pressing public sector needs.

Establishment of the KEERF can help the government meet its national EE targets of reduced energy imports and public energy costs, improved comfort levels, refurbished public building stock, creation of an ESCO industry and new jobs, and reduced greenhouse gas (GHG) emissions. KEERF will be sustainable, since no recurring Government budget will be needed, and operate on a revolving basis for more than 20 years. It can provide the basis for extension or replication to other municipal sectors (e.g., street lighting, water pumping, etc.). Other advantages include:

- The KEERF will represent the interests of all the relevant stakeholders (including various Ministries and private sector stakeholders).
- Fund management can be independent and thus avoid political influence.
- The KEERF can allow pooling of government and donor funds to avoid parallel initiatives.
- The Board can select a highly qualified management team.
- Fund management staff would be long-term and could be compensated at market-based levels.
- The Fund may not have to comply with government procurement rules and bureaucratic procedures.
- It can operate with more flexibility and faster decision-making than a government agency.

Capitalization of the KEERF. The Fund could be capitalized with equity of €5 million - from the European Union (EU), Green Climate Fund (GCF), Government contributions, and other donors - with €5 million in concessional debt financing from international financial institution (IFI) loans. Assuming adequate deal flow and operations, it would likely require a recapitalization of about €10 million in Year 6.

Results. It is projected that the KEERF would make investments in EE projects of about €1.0 million in Years 1 to 4, increasing to €1.5 million per year in Years 5 and 6, €2.0 million from Years 7 to 10, and €2.5 million from Years 11 to 15. The KEERF would be likely to achieve breakeven in terms of covering its administrative and overhead costs and fees from its revenues from Year 4 onwards. Over a 15-year period, other impacts could include:

- Cumulative project investments by Year 15 – €27.5 million
- Annual government budget savings by Year 15 – about €4 million
- Lifetime energy savings – 617 GWh
- Lifetime GHG reductions – 326,850 tons of CO₂e
- Increase in green employment – about 500 jobs

Next steps. The most critical next step is for the GOK to make a decision regarding the most suitable option and institutional set-up for the proposed financing program. Subsequent steps include adopting the necessary legislative framework to establish the Fund, mobilizing the required financing, developing the governance structure and operating procedures, preparing the investment and staffing plan, and identifying a pipeline of potential projects.
SECTION 1 - INTRODUCTION

Importance of Energy Efficiency in Kosovo

The Republic of Kosovo, the youngest country in Europe has experienced strong economic growth performance since its formation in 1999. The economic growth is expected to continue at about 4 percent per year in the medium term (World Bank 2014a). The economic growth has led to increased demands for electricity. The existing domestic electricity supply system (which primarily consists of two unreliable lignite-fired power plants that are poorly maintained and operate well below their installed capacity. The reliability of electricity supply has been cited as one of the major constraints to businesses in Kosovo (World Bank 2014a). Also, as demand for electricity outstrips the supply, Kosovo must rely on unreliable electricity imports. After the planned decommissioning of one of the existing power plants at the end of 2017, there is likely to be additional supply shortfall, further exacerbating the reliability of supply and the need for expensive imports.

With respect to heat supply in Kosovo, the main energy sources for space and water heating in buildings are biomass (mainly firewood) and electricity, together accounting for over 80 percent of heating consumption. The high consumption of unmanaged and unregulated firewood can lead to forest degradation, giving rise to adverse environmental, economic and health impacts. Heating with electricity is highly inefficient, and exacerbates power supply interruptions, especially during the heating season. Kosovo’s energy supply is especially constrained during the winter months due to electricity demand for heating. Kosovo has two isolated operating district heating (DH) systems (Pristina and Gjakova), which have been facing serious problems as the heat demand exceeds supply; collection rates are low; fuel costs are high; and thermal losses exceed 18 percent.¹

Figure 1.1 shows a comparison of the energy intensity of the Kosovo economy relative to many other countries in the Western Balkans and the European Union (EU).

Figure 1.1 – Energy Intensity of Kosovo and Other Countries

¹ The situation has improved for DH Pristina as heat supply now exceeds demand, collection rates have increased, and fuel costs are lower.
As seen in Figure 1.1, the energy intensity$^2$ of Kosovo (0.46 tpes/000 US$ GDP) is comparable to the other Western Balkan countries, but is substantially higher than the intensity of OECD countries (0.13) and the world average (0.24), and over 4 times higher than many EU countries.$^3$

Given that Kosovo’s per capita energy consumption (at 1.29 tpes per capita) is only about 31 percent of the OECD countries (at 4.2 tpes per capita), energy intensity could rise further as incomes increase (IEA 2015).

Most of Kosovo’s electricity generation comes from two old and unreliable lignite-fired power plants leading to an increasing supply-demand gap, often met by expensive imports. A World Bank study of energy supply options (World Bank 2011) explored a number of options for bridging this gap and concluded, among other things, that renewable energy (RE) and EE should represent major components of the future energy supply options. The high energy intensity of Kosovo relative to EU and OECD countries confirms the potential role of EE in Kosovo’s future economy.

### Need for Energy Efficiency in Public Buildings and Facilities

In Kosovo, the residential sector represents the largest portion of energy consumption at 39 percent. Industry and transport make up 27 percent and 23 percent respectively, and services (which include the public sector) consume 9 percent. The remaining 2 percent of consumption comes from the agricultural sector (see Figure 1.2).

![Energy Intensity of Selected Countries and Regions](chart.png)

Source: IEA 2015

$^2$ Energy intensity is expressed as tons of primary energy supply divided by gross domestic product (GDP) in thousand US dollars (2005).

$^3$ For example, Denmark, Austria, Germany and Sweden have energy intensities lower than 0.10
Recent studies of the buildings sector in Kosovo (NPEEPB WBI 2013, and World Bank 2015) have estimated the size of the buildings market and the potential for EE. In general, these studies have estimated significant potential savings. While the residential sector dominates in the buildings sector, municipal and central government buildings also provide opportunities for EE improvement. The World Bank Institute (WBI) study estimated the savings potential for public buildings as 38 to 47 percent in municipal buildings and up to 49 percent in central government buildings. Such savings offer substantial budgetary savings—estimates indicate that the GOK spends some €24.3 million per year for energy in its buildings and could save 20 to 30 percent annually through cost-effective EE measures (World Bank 2015). The simple payback period for municipal and central government buildings has been estimated to be 4.9 to 5.3 years (World Bank 2013a), indicating that these buildings can provide a potential entry point into the buildings sector and can demonstrate EE viability for commercial financing in other sectors.

A major benefit of EE in the case of public buildings is that the resulting energy cost savings can lead to the improvement of the country’s fiscal balance. EE thus represents an opportunity for the government and public sector of Kosovo to reduce their energy budget expenditures. Another very significant benefit of EE in public buildings is the need for renovation. Many public buildings in Kosovo are aging (more than half of the Kosovo building stock was constructed between 1970 to 1985) and require immediate investment in thermal insulation, efficient double- or triple-glazed windows, and efficient space heating and hot water systems in order to maintain the value of property and to improve the comfort of the buildings’ occupants. This presents an ideal opportunity for EE investments.

Implementation of EE in public buildings will contribute towards meeting the NEEAP energy savings target of 1 percent per annum for the period up to 2018, and energy-efficient retrofits and renovations will ultimately contribute to the country’s sustainable economic development. Finally, government actions to improve EE in public buildings will lead to enhanced reliability and increased security of energy supply, and demonstrate the willingness of the government to lead by example in promoting a national EE agenda.
Objectives
The primary objective of this report is to identify options that can address the barriers to financing and help scale-up EE implementation in public buildings in Kosovo. Specifically, the project is designed to:

- Review existing information on the energy consumption in the public sector (defined as municipal and central government buildings and facilities) and assess energy savings opportunities in this sector.
- Document the existing legislative and regulatory framework for facilitating EE projects in the public sector.
- Identify the major barriers to EE financing in the public sector.
- Review international experience with financing options for public sector EE implementation.
- Identify attractive options for EE implementation in public buildings in Kosovo.
- Conduct a comparative assessment of the advantages and limitations of the options.
- Define the steps for selection and implementation.

Summary of Approach
The project consisted of the following activities:

1. Inception Mission and review of current situation;
2. Development of a long list of financing options based on international experience with public sector EE financing;
3. Assessment of the options in the context of Turkey;
4. Selection of a short list of three options;
5. Assessment of the selected options; and
6. Preparation of this report.

This report was discussed at a Stakeholder Workshop in Pristina in April 2016 in order to solicit feedback on the options and reach consensus on the steps for moving forward with the detailed design and implementation of the preferred financing option. A summary of the results of this Roundtable is provided in Annex D.

Outline of This Report
Section 2 provides a summary of the country context, including the legislative and regulatory framework, energy consumption characteristics of municipal and central government buildings, and potential for energy savings and investments needed.

Section 3 summarizes the barriers to financing EE in the public sector in Kosovo, including legal and regulatory barriers, lack of access to commercial financing, institutional barriers, and limited implementation capacity.

Section 4 provides information on international experience with financing public sector EE projects. It includes a review of a number of financing mechanisms, including budget financing,
EE revolving funds, dedicated EE credit lines, risk-sharing programs, public or super ESCO, and commercial financing with ESCOs and performance contracting. It also presents a comparative assessment of the key characteristics of these financing options.

Section 5 identifies the three options considered appropriate for implementation in Kosovo -- budget financing, Kosovo EE revolving fund (KEERF), and Kosovo super ESCO (KESCO) – and provides detailed information on each. It also presents information on the potential role of international financial institutions in providing complementary financial and technical assistance (TA).

Section 6 summarizes the advantages and limitations of the three financing options and provides guidance on moving forward with the recommended option – the KEERF. A road map for implementing the KEERF is included.
SECTION 2 - COUNTRY CONTEXT

Legislative and Regulatory Framework

Energy Community Treaty

In October 2005, the Republic of Kosovo became a signatory to the Energy Community Treaty. This treaty brought together the EU and contracting parties in order to create the Energy Community, an integrated energy market (electricity and gas) that aims to extend the EU internal energy market. This is achieved by defining clear objectives and a legally binding framework that all Energy Community members must meet and observe.

Included within this legally binding framework are directives for influencing and regulating energy efficiency. The following are the key energy-related directives within this objective:

- Energy Performance in Buildings
- Energy labeling of household appliances

Kosovo Legal Framework

Driven by the commitment to and common vision of the Energy Community, Kosovo has developed the legal framework of its energy sector and EE in order to internally regulate the energy sector and ensure Treaty obligations are met and maintained. This framework has fostered many positive developments within Kosovo’s energy sector, particularly related to energy efficiency, albeit not without serious challenges related to the actual implementation processes. One of the main obstacles has been the regulated energy prices in Kosovo. They are not yet cost-reflective, thus making EE improvements less attractive.

Primary Legislation

The primary legislation that governs EE in Kosovo is the Law on Energy Efficiency. This Law presented the broad policy framework for EE, led to the creation of the Kosovo Energy Efficiency Agency, and defined the regulatory objectives and obligations. A number of secondary legal acts (i.e. regulations, administrative instructions, etc.) have been passed, specifying the measures and tasks that must be undertaken within the energy sector in order to achieve the expected EE levels.

Several other current laws indirectly regulate or influence EE within Kosovo. These include:

- Law on Energy
- Law on Electricity
- Law on the Energy Regulator
- Law on Spatial Planning
- Law on Construction
• Law of Foreign Investments
• Law on Competition
• Law on District Heating
• Law on Public-Private Partnerships and Concessions
• Law on Oil and Oil Derivatives

Secondary Legislation
The primary EE legislation is supplemented by a number of decisions, regulations, and administrative instructions and rules. These include:

• Decisions:
  ▪ Government decision on Kosovo A decommissioning
  ▪ Government decision on installation of efficient bulbs in public buildings

• Administrative Instructions and Rules:
  ▪ Administrative Instruction on Promotion of EE for Final Consumers and Energy Services
  ▪ Administrative Instruction on Labeling of Energy Using Equipment
  ▪ Administrative Instruction on Energy Audit
  ▪ Administrative Instruction on Rules of Energy Balance
  ▪ Administrative Instruction on the opening of an electricity market for non-household consumers
  ▪ Administrative Instruction on Targets of Renewable Energy Sources
  ▪ Rule on the support of electricity for which the certificate of origin and procedures for admission to the support scheme are issued
  ▪ Rule on creating the system of certificates of origin for electricity produced by BRE20

• Regulations:
  ▪ Regulation on the establishment and functioning of the commission for certification of auditors and energy managers
  ▪ Regulation on internal organization of the Kosovo Agency for Energy Efficiency
  ▪ Technical Regulation for thermal energy savings and thermal protection in buildings

In addition to this legislation, Kosovo institutions have produced and updated a number of strategies and plans on EE, most notably the NEEAP which calls for a cumulative energy savings target of 9 percent by 2018. In the 2nd NEEAP (GOK 2013), GOK reported to have met their first period (2010-2012) target of 3 percent.

Furthermore, the EE Law obligates municipalities to undertake a number of actions in support of the national EE target. The Law requires the municipalities to develop Municipal Energy Efficiency Plans (MEEPs), in line with the instructions of the Kosovo Energy Efficiency Agency (KEEA). Such plans need to be adopted by the Municipal Assembly and delivered to the KEEA. The municipalities are also obligated to develop the MEEP Implementation Progress Report, in
line with the instructions of the KEEA. These reports have to be adopted by the Municipal Assembly and delivered to the KEEA. Such MEEPs have now been completed by 15 (out of 37) municipalities.

The key elements of the existing legislative framework and potential changes in the framework are provided in Annex A.

**Energy Consumption in Public Buildings and Facilities in Kosovo**

The major sources of information on the public buildings stock and energy consumption are the National Building Energy Efficiency Study (World Bank 2013), which reported data from 2010 and the updated Building Stock Study (World Bank 2015) that reported data from 2014.

**Municipal Buildings**

The Republic of Kosovo has 37 municipalities. The total building space within these municipalities is approximately 1.6 million square meters (m²). Pristina, the capital, has the biggest share of this space at about 200,000 m². Table 2.1 shows the characteristics of municipal buildings.

### Table 2.1 – Municipal Buildings in Kosovo

<table>
<thead>
<tr>
<th>Municipality</th>
<th>No. of Buildings</th>
<th>Floor Area Thousand m²</th>
<th>Energy Consumption ktoe</th>
<th>Energy Costs Thousand €</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pristina</td>
<td>127</td>
<td>199</td>
<td>6.26</td>
<td>3170</td>
</tr>
<tr>
<td>Prizren</td>
<td>112</td>
<td>117</td>
<td>0.91</td>
<td>899</td>
</tr>
<tr>
<td>Ferijaz</td>
<td>97</td>
<td>101</td>
<td>0.97</td>
<td>1412</td>
</tr>
<tr>
<td>Gjilan</td>
<td>110</td>
<td>101</td>
<td>0.99</td>
<td>486</td>
</tr>
<tr>
<td>Podujeva</td>
<td>101</td>
<td>81</td>
<td>0.63</td>
<td>595</td>
</tr>
<tr>
<td>Others</td>
<td>1,054</td>
<td>1,026</td>
<td>8.92</td>
<td>9261</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,601</strong></td>
<td><strong>1,625</strong></td>
<td><strong>18.68</strong></td>
<td><strong>15,823</strong></td>
</tr>
</tbody>
</table>

*Source: World Bank 2015*

With a total annual energy consumption of 217,196 MWh in 2013, the average specific energy consumption in municipal buildings amounted to 134 kWh/m² (total of 18.68 ktoe). The total cost of the energy consumption in 2013 was €15.8 million, and it is broken down as shown in Figure 2.1.

The oil costs in Figure 2.1 were expected to decrease since then with the completion of the cogeneration renovation to the Kosovo B lignite plan to enable it to supply heat through the Pristina district heating network (Termokos) in 2014, which has reduced heating costs substantially compared to previous costs using heavy fuel oil, or mazut.
The major types of buildings in municipalities are offices, schools and hospitals. Table 2.2 shows the energy consumption in these building types based on the World Bank Building Stock Study (World Bank 2015).

<table>
<thead>
<tr>
<th>Building Type</th>
<th>No. of Buildings</th>
<th>Floor Area</th>
<th>Energy Consumption</th>
<th>Specific Energy Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>170</td>
<td>104</td>
<td>1.41</td>
<td>158</td>
</tr>
<tr>
<td>School</td>
<td>965</td>
<td>1,292</td>
<td>14.78</td>
<td>133</td>
</tr>
<tr>
<td>Hospital</td>
<td>345</td>
<td>127</td>
<td>2.06</td>
<td>189</td>
</tr>
<tr>
<td>Other</td>
<td>86</td>
<td>104</td>
<td>0.43</td>
<td>48</td>
</tr>
<tr>
<td>Total</td>
<td>1,566</td>
<td>1,625</td>
<td>18.68</td>
<td>134</td>
</tr>
</tbody>
</table>

Table 2.2 – Energy Consumption by Building Type in Municipalities

The results indicate that hospitals and office buildings exhibit the highest specific energy consumption at 189 and 158 kWh/m² respectively, while schools have the overall highest total energy consumption. Specifically, the energy consumption in schools is 133 kWh/m², which appears to be low and may result from the buildings not being operated according to national norms. A significant number of schools and hospitals on the local, municipal level utilize firewood for heating as a means of cutting energy costs, yet maintaining more or less comfortable building temperatures. If these buildings were operated according to Kosovo building standards their specific energy consumption would be approximately 180 kWh/m² for schools and 255 kWh/m² for hospitals (World Bank 2015).
Central Government Buildings

The Building Stock Study estimated that the Central Government of Kosovo owns and manages 369 buildings, or about 18.7 percent of the total public building stock. These buildings are comprised of the Ministry of Public Administration (in charge of governmental buildings such as ministries, agencies, etc.), dormitories, universities, court and prosecution buildings, police stations, hospitals, security force facilities, and prisons and detention centers. The total floor surface of these buildings is 745,301 m², the highest percentage of which, approximately 31.4 percent, is dedicated to hospitals (234,000m²). Governmental administration buildings account for 130,000m² or 17.4 percent of the total floor surface of central government buildings, followed closely by police stations at 103,000m² or 13.8 percent and universities with 93,000m² or 12.5 percent (see Table 2.3).

All of these buildings have high energy use, mainly for the purpose of maintaining a regulated internal temperature to maintain desired comfort levels for employees. With a total annual energy consumption of 91,843 MWh in 2013, the average specific energy consumption in Central Governmental Buildings for that same year amounted to approximately 123 kWh/m² (or total ktoe 7.91).

<table>
<thead>
<tr>
<th>Building Type</th>
<th>No. of Buildings</th>
<th>Floor Area Thousand m²</th>
<th>Energy Consumption ktoe</th>
<th>Energy Costs Thousand €</th>
<th>Specific Energy Consumption kWh/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Public Administration</td>
<td>47</td>
<td>130</td>
<td>1.38</td>
<td>1204</td>
<td>123</td>
</tr>
<tr>
<td>Dormitories</td>
<td>12</td>
<td>47</td>
<td>0.24</td>
<td>214</td>
<td>58</td>
</tr>
<tr>
<td>Universities</td>
<td>28</td>
<td>93</td>
<td>0.86</td>
<td>653</td>
<td>107</td>
</tr>
<tr>
<td>Courts</td>
<td>35</td>
<td>47</td>
<td>0.52</td>
<td>343</td>
<td>127</td>
</tr>
<tr>
<td>Police</td>
<td>99</td>
<td>102</td>
<td>0.95</td>
<td>747</td>
<td>108</td>
</tr>
<tr>
<td>Hospitals</td>
<td>67</td>
<td>234</td>
<td>2.92</td>
<td>2479</td>
<td>135</td>
</tr>
<tr>
<td>Army</td>
<td>31</td>
<td>34</td>
<td>0.09</td>
<td>58</td>
<td>30</td>
</tr>
<tr>
<td>Prisons</td>
<td>50</td>
<td>57</td>
<td>0.95</td>
<td>841</td>
<td>194</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>369</strong></td>
<td><strong>745</strong></td>
<td><strong>7.91</strong></td>
<td><strong>6,539</strong></td>
<td><strong>123</strong></td>
</tr>
</tbody>
</table>

*Source: World Bank 2015*

Although these buildings have high specific energy consumption (between 123 and 194
kWh/m²), comparison of these figures with the results of energy audits performed in public buildings in Kosovo suggests that the specific energy consumption can be considered ‘low’. Therefore, it can be assumed that the buildings are not operated on the comfort level stipulated in the national legislation, which is about 20° C. If these buildings were operated according to GOK, and thus European building standards, their specific energy consumption would be between 166 and 262 kWh/m² (World Bank 2015).

**Opportunities for Improving Energy Efficiency**

Kosovo has high potential for investment in EE. In addition to the EE buildings study conducted by Eptisa (World Bank 2013a), and the 2015 Building Stock Study (World Bank 2015), the World Bank has conducted a number of energy audits of public buildings. These studies and audits have identified EE measures and estimated energy savings. Table 2.4 summarizes the energy savings measures.

It should be noted that the current standards of heating and lighting services are not being met in many public buildings. Anecdotal evidence provided in interviews conducted by GreenMax (WBI 2013) with several stakeholders, and confirmed by the energy audits in central government buildings by iC clean energy, suggested that the levels of heat and light received by a large number of municipal buildings in Kosovo are far below what is required, especially in municipalities outside of Pristina.

Table 2.4 - Energy Efficiency Measures and Potential Savings

<table>
<thead>
<tr>
<th>Energy Services</th>
<th>Energy Efficiency Measures</th>
<th>Energy Efficiency Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Municipal Buildings</td>
<td>Central Govt. Buildings</td>
</tr>
<tr>
<td>Space Heating</td>
<td>Thermal Insulation - Outside Walls</td>
<td>41.8</td>
</tr>
<tr>
<td></td>
<td>Thermal Insulation - Roof</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double or Triple Glazing - Windows</td>
<td></td>
</tr>
<tr>
<td></td>
<td>More Efficient Heating System</td>
<td></td>
</tr>
<tr>
<td>Water Heating</td>
<td>Heating Boiler - Label A</td>
<td>43.8</td>
</tr>
<tr>
<td></td>
<td>Solar Water Heating</td>
<td></td>
</tr>
<tr>
<td>Cooking</td>
<td>Cooking Stoves - Label A</td>
<td>14.2</td>
</tr>
<tr>
<td>Lighting</td>
<td>Light Bulbs - Label A</td>
<td>73.7</td>
</tr>
<tr>
<td>Electrical Appliances</td>
<td>Washing Machines - Label A</td>
<td>24.00</td>
</tr>
<tr>
<td></td>
<td>Refrigerators - Label A</td>
<td></td>
</tr>
<tr>
<td>Air Conditioning</td>
<td>Air Conditioners - Label A</td>
<td>21.90</td>
</tr>
</tbody>
</table>

Source: World Bank 2013a

Table 2.5 shows the results of energy audits conducted in the current World Bank project (World Bank 2016).
These audits demonstrate the large savings potential in public buildings (62 percent in central government buildings and 54 percent in municipal buildings). They also show that these savings are achievable with paybacks of about 5 years. The investment requirements have been estimated in these audits to be €57 per m² in central government buildings and €70 per m² in municipal buildings. Using these estimates, the total investment potential for cost-effective EE is €42.5 million in central government buildings and €113.8 million in municipal buildings. The total investment potential is €156.2 million. Table 2.6 summarizes these estimates.

Table 2.6 – Investment Potential in Municipal and Central Government Buildings

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Floor Area (000 m²)</th>
<th>Investment (€/m²)</th>
<th>Total Investment (€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Government</td>
<td>745</td>
<td>57</td>
<td>42.5</td>
</tr>
<tr>
<td>Municipal</td>
<td>1,625</td>
<td>70</td>
<td>113.8</td>
</tr>
<tr>
<td>Total</td>
<td>2,370</td>
<td>127</td>
<td>156.2</td>
</tr>
</tbody>
</table>

Source: Estimated by World Bank based on the KEEREP energy audit database

Based on an analysis of the audit database from the energy audits of public buildings conducted under the World Bank funded Kosovo Energy Efficiency and Renewable Energy Project (KEEREP).
SECTION 3 - BARRIERS TO FINANCING PUBLIC SECTOR EE

Introduction

Energy efficiency investment programs in public institutions are notoriously difficult to implement. They are impeded by the same barriers that have slowed down EE improvements in other sectors of the economy, such as lack of information on EE potential and benefits, lack of trained personnel, lack of incentives, high transaction costs, and scarcity of financing. In addition, several barriers specific to the public sector further hold back sustained EE improvements. Among them are public accounting, budgeting and procurement rules, financing constraints, and very limited staff capacity and motivation for identifying and implementing EE measures. Figure 3.1 lists the barriers to EE in the public sector based on international experience.

Figure 3.1: Barriers to EE in the Public Sector

<table>
<thead>
<tr>
<th>Policy / Regulatory</th>
<th>Equipment/ Service Provider</th>
<th>End User</th>
<th>Financiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Low energy pricing and collections</td>
<td>• High project development costs</td>
<td>• Lack of awareness</td>
<td>• New technologies and contractual mechanisms</td>
</tr>
<tr>
<td>• Public procurement and budgeting policies</td>
<td>• Perceived risk of late/ non-payment of public sector</td>
<td>• High upfront and project development costs</td>
<td>• Small sizes/widely dispersed projects leads to high transaction costs</td>
</tr>
<tr>
<td>• Limitations on public financing and borrowing capacity</td>
<td>• Limited demand for EE goods/services</td>
<td>• Ability/willingness to pay incremental cost</td>
<td>• High perceived risks, including public credit risks</td>
</tr>
<tr>
<td>• Ad hoc planning</td>
<td>• Diffuse/diverse markets</td>
<td>• Low EE benefits relative to other costs and priorities</td>
<td>• Other higher return, lower risk projects</td>
</tr>
<tr>
<td>• Import duties on EE equipment</td>
<td>• New contractual mechanisms (e.g., ESCOs)</td>
<td>• Perceived risks of new technologies/systems</td>
<td>• Over-collateralization, restrictions on public assets as collaterals</td>
</tr>
<tr>
<td>• Under-developed or weak EE institutional framework</td>
<td>• Limited technical, business, risk management skills</td>
<td>• Low levels of comfort</td>
<td>• Behavioral biases</td>
</tr>
<tr>
<td>• Lack of appliance standards and building EE codes, lack of testing, poor enforcement</td>
<td>• Limited access to financing/ equity</td>
<td>• Mixed/lack of incentives</td>
<td>• Lack of credible data</td>
</tr>
<tr>
<td>• Limited and poor data</td>
<td></td>
<td>• Behavioral biases</td>
<td>• No discretionary budgets for special projects/ upgrades and limited ability to borrow</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Cannot collateralize public assets</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• New technologies and contractual mechanisms</td>
</tr>
</tbody>
</table>


Barriers to Financing Public Sector EE in Kosovo

The barriers to financing public sector EE projects in Kosovo have been summarized below in the following categories:

• Policy and regulatory barriers
• Barriers related to equipment and service providers
• Barriers related to end users
• Lack of access to commercial financing

In addition, the public sector has very limited capacity to identify, develop and implement energy efficiency projects.

Legal and Regulatory Barriers

• **Budgetary and borrowing restrictions.** Both central government agencies and municipalities have limited availability of budget funds for investment in EE improvements. Kosovo’s Law on Public Debt imposes some restrictions on the ability of municipalities to borrow funds since municipalities may not incur debt unless they have received unqualified audit opinions from the Office of the Auditor General in the previous two years. Existing regulation\(^6\) limits municipal debt in conformity with rules regulating deficit limits.\(^7\) The municipalities are required to include a plan for issuance of short-term debt into their annual budget proposals and the MOF has the right to approve or deny the issuance of municipal debt. Financing restrictions for central government and municipalities, resulting from austerity measures have led to considerable fiscal pressures on both the central government and the municipalities resulting in limited availability of budget funds for investment in EE improvements and implementation of their EE Action Plans.

• **Restrictive budgetary procedures.** Existing budgetary rules may not allow public facilities to benefit from any energy savings they achieve, since each year’s budget allocation is based on the previous year’s expenditures. Therefore, the reduction of budgetary spending for energy costs can lead to a decrease in allocation in the next budget cycle. Operating cost reductions are also typically unable to cover capital expenditures. While the Law on Energy Efficiency includes procedures for setting up a national fund to promote EE projects, such a fund is not permissible under existing legislation, which only allows for the existence of a single national investment fund.

• **Public procurement rules.** Public procurement regulations and procedures require tenders to be evaluated purely on the basis of lowest cost, and the value of the energy savings from EE is not adequately taken into account. While the new Law on Public Procurement requires government tenders to take account of any EE-related benefits that a particular proposal will deliver, the secondary legislation to support its implementation remains to be developed.

• **Low energy tariffs and prices.** The regulatory agency has not developed cost-reflective tariffs for electricity and heat. Also, the market prices of fuels such as firewood and lignite do not reflect their production costs. The low energy costs provide limited incentives for investments in EE.

• **Building codes.** There is a lack of building code enforcement and the new energy performance in buildings directive has not yet been implemented.

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\(^6\) The Regulation on Procedures for Issuance and Management of State Debts, State Guarantees, and Municipal Debts, Article 9.

\(^7\) Prescribed under the Law on Management of Public Finances and Accountability.
Barriers related to Equipment and Service Providers

- **Limited demand and high development cost.** There is limited demand for EE services in the public sector, and equipment. Service providers need to devote substantial time and effort to develop EE projects, which leads to high project development costs.

- **Limited experience and capabilities.** Kosovo has very limited experience mechanisms such as energy saving performance contracting (ESPC). There are few energy service companies (ESCOs) in the market and none of them have experience working with the public sector. The existing energy service providers have limited technical, business development, and risk management skills and capabilities.

- **Lack of commercial financing.** Equipment suppliers and energy service providers have limited access to commercial financing and cannot invest much of their own equity in EE projects. Also, innovative financing mechanisms such as leasing or vendor financing for EE equipment are not common in Kosovo.

- **No internal budgets.** There are generally no discretionary budgets for special projects or efficiency upgrades. Also, public sector decision-makers do not have any incentives to undertake EE projects because they do not benefit from the resulting cost savings.

- **Limited knowledge of EE options.** Public sector facility and energy managers (both in central government agencies and in municipalities) have limited knowledge and awareness of EE technologies and implementation options.

- **Low existing comfort levels and poor structural condition.** The conditions of many public buildings limits the cost-effectiveness of EE improvements.

Lack of Access to Commercial Financing

- **Lack of interest and unattractive financing terms.** Commercial banks have limited or no interest in lending to the public sector. Most banks consider loans to municipalities riskier than loans to private sector organizations such as small and medium-sized enterprises (SMEs). The commercial financing terms (interest rate, loan tenor, collateral requirements, etc.) are not attractive from the perspectives of the public agency decision-makers.

- **Collateral requirements.** Commercial banks require substantial assets to be pledged as collateral. They are unwilling or unable to offer debt financing to public agencies because it is very difficult to collateralize public assets for debt financing.

- **High transaction costs.** The small size of EE projects leads to relatively high transaction costs, which makes financing such projects unattractive.

Implementation Capacity

- **Public agency decision-makers.** Both central government agencies and municipalities have limited capacity to identify EE opportunities, prepare “bankable” project proposals, carry out procurement for goods and services, and develop and implement EE projects.

- **Public agency implementers.** No Ministry in Kosovo, including KEEA, has full
responsibility for EE and none are assigned to assist public agencies with EE implementation. Therefore, the institutional capabilities, roles and expertise are fragmented. Public agencies that are interested in EE have no single agency that can assist or guide them through the financing and implementation process.

- **Inadequate delivery infrastructure.** Kosovo has a very limited energy services delivery infrastructure. The fragmented nature of the private sector and the absence of ESCOs in the local market limit the use of performance-based contracting options in the public sector.

**Donor-Funded Energy Efficiency Activities**

Many donor agencies have been active in Kosovo and have initiated activities to address some of the barriers to EE financing in the public sector. A summary is provided in Table 3.1.

**Table 3.1 – Summary of Donor Activities**

<table>
<thead>
<tr>
<th>Donor(s)</th>
<th>Scope</th>
<th>Amount</th>
</tr>
</thead>
</table>
| **KfW, EU, WBIF** | Termokos Cogeneration Project to improve DH connection (up to substations). Connection via a 10.5 km pipeline and heat exchanger and steam extraction of 140 MWth in the first phase to the thermal power plant (TPP) Kosovo B converting this TPP into a combined heat and power (CHP) plant. | Total: €37 million          
|                 |                                                                                                  | Total Breakdown:          
|                 |                                                                                                  |   ● €15 million KfW and German Government (5 million loan, 10 million grant)  
|                 |                                                                                                  |   ● €14 million EU grant  
|                 |                                                                                                  |   ● €1.8 million SIDA grant  
|                 |                                                                                                  |   ● €1.5 million Luxembourg grant  
|                 |                                                                                                  |   ● €1.2 million Kosovo Government grant  
|                 |                                                                                                  |   ● €3.8 million Pristina Municipality grant  
| **KfW**         | A new Termokos Project, which focuses on rehabilitation of District Heating Systems and its expansion in Pristina Substation rehabilitation (50 substations). Technical measures include modernization and/or renewal and/or replacement of pipes, heat sources and substations. | €5 million grant         |
| **KfW, WBIF**   | A WBIF study and resulting implementation of EE measures in public buildings at the municipal level. The project covers approximately 30 buildings in four municipalities. The project contract was signed in January 2016. A ratification act is expected to take place soon which will cover public healthcare and education buildings. | Total: €7.8 million total          
|                 |                                                                                                  | Total Breakdown:          
|                 |                                                                                                  |   ● €2.8 million WBIF grant  
|                 |                                                                                                  |   ● €5 million KfW loan/ grant  

| **European Union** | A European Commission (EC) study and resulting implementation of EE measures at the municipal level in 65 buildings with grant support. This project is expected to close in 2016. This was implemented in order to achieve objectives related to the Energy Treaty.  
**Pristina Network Grid**  
Construction of the CHP plant in Gjakova (8MW thermal and a cogeneration unit of capacity 8.2MW thermal and 1.5MW electrical) based on biomass: corn stalks, wheat/barley, wood chips from forests, and vine pruning; | €15.6 million EU-IPA grant  
€22 million euro (To be confirmed)  
€ 987,350 |
| **European Bank of Reconstructio and Development (EBRD)** | Kosovo Sustainable Energy Projects (KoSEP) - Credit line for RE/EE projects in SMEs and household sectors through participating commercial banks. EBRD intends to continue with the report expected in April.  
The projects contribute to EE and RE improvements in Kosovo’s residential and business sectors. The awarded projects have demonstrated innovative and replicable energy-saving examples, ranging from investments in new welding robots to solar water-heating systems, energy-efficient tractors, thermal windows and wall insulation. Furthermore, such investments help to introduce innovation and improve competitiveness in the private sector. | Total: €15 million  
Total Breakdown:  
- €3 million EC grant  
- €12 million EBRD loan  
Note: €9 million has been disbursed, and €2 million is currently in the market through two microfinance institutions. |
| **World Bank** | Kosovo Energy Efficiency and Renewable Energy Project will finance the renovation of about 100 central government buildings with EE/RE measures, implement a pilot municipal EE component and support technical assistance on EE/RE legislation and implementation. | Total: US$32.5 million |
| **Government of Kosovo** | Minor energy auditing projects in over 200 buildings have taken place in both central and local buildings. Primarily, these projects aim to identify buildings that spend the most. | GOK allocates ~€250,000 annually for this purpose) since 2008). |
| **GiZ** | GiZ is Planning a project supporting municipalities towards meeting Energy Efficiency targets. The project is under preparation and is expected to start in 2017.  
Open regional fund, which covers all Energy Treaty countries has also intervened in Kosovo and among others has donated a tool that will | Total: €2.5 million |
| automate reporting on KEEAP benchmark achievements. |  |
SECTION 4 - INTERNATIONAL EXPERIENCE IN FINANCING PUBLIC SECTOR ENERGY EFFICIENCY PROJECTS

Introduction

Recognizing that grant financing is not sustainable, various countries have implemented a range of financing and implementation mechanisms, either to enhance the financial leverage of public funds or to gain access to commercial funding for public sector EE projects. These include:

- Budget financing with capital recovery, or ‘budget capture’ (financing by the MOF or a parent budgeting agency using donor funds, with repayments in the form of reduced future budgetary outlays)
- Utility on-bill financing
- Establishment of an EE revolving fund
- Establishment of a public or super ESCO
- Establishment of an EE credit line through existing financial institutions, such as a development bank or commercial banks
- Creation of a risk-sharing facility, such as a partial credit guarantee program, to cover commercial loans
- Commercial financing, bonds
- Vendor credit and leasing
- Leveraging commercial financing using energy service companies (ESCOs) under the energy saving performance contracting (ESPC) approach.

Figure 4.1 illustrates these options in the form of a “financing ladder” for public sector projects, moving from public (bottom) to commercial (top) financing. A brief description of each of these options follows.

![Figure 4.1. Illustrative Financing Ladder for Public Sector EE Projects](image)

Source: Adapted from World Bank 2013b
A brief description of each option in the financing ladder is provided below. Additional information is presented in Annex B.

**Budget Financing with Capital Recovery**

Under this approach, financing is provided by a government agency, such as the MOF, using a combination of government budget allocations and IFI or donor funds. This funding covers the investment costs of the EE projects in both central and municipal buildings and facilities. The funding recipient “reps” the funds using the savings generated by the investment project in the form of reduced budgetary outlays for energy bills of the public entity in future years (“budget financing”). The size of the reduced outlay is usually based on the amount of energy cost savings. The flow of funds to pay for EE improvements follows the same flow as the normal appropriations from the MOF. The repayment to the MOF could be complete or partial; the partial approach encourages municipal utilities and public agencies to participate in the program because they retain a share of the savings achieved.

**Utility On-Bill Financing**

Utility on-bill financing is a mechanism under which a utility provides financing for the implementation of EE projects. The funds are provided as a loan to the customer (which could be a public sector entity) for equipment purchase and installation, and loan repayments are recovered by the utility through the energy bill (ECO-Asia 2009). Individual customers in whose facilities have installed EE measures (the direct beneficiaries of the energy savings and related cost reductions) bear the associated costs.

The utility on-bill financing approach is designed to overcome the first cost barrier (lack of availability of internal funds) for investment in energy efficiency. Under this approach, the utility provides or arranges for the financing needed for the project investment. The customer signs a Loan Agreement (LA) with the utility and the utility collects the loan repayments from the customer through the customer’s utility bill by adding a line item on the bill. In most cases, the loan repayments are arranged such that the amount of the repayment is smaller than the customer’s cost reduction from the energy savings created by the energy-efficient equipment. This allows the customer to be “cash flow positive” throughout the life of the EE project.

**Energy Efficiency Revolving Fund (EERF)**

An EERF is a viable option for scaling up EE financing in the public sector. Under a typical EERF, created using public funds and IFI loans, financing is provided to public agencies to cover the initial investment costs of EE projects. Some of the resulting savings are then used to repay the EERF until the original investment is recovered, plus interest and service charges. The repayments can then be used to finance additional projects, thereby allowing the capital to revolve and creating a sustainable financing mechanism (World Bank 2014b).

Since both the borrower and lender are publicly owned, such funds may often offer lower-cost financing with longer tenors (repayment periods) and less stringent security requirements than typical commercial loans. Because EE projects have positive financial rates of return, capturing these cost savings and reusing them for new investments creates a more efficient use of public funds than typical budget- or grant-funded approaches. This can help demonstrate the commercial viability of EE investments and provide credit histories for public agencies, paving
the way for future commercial financing.

**Public or Super ESCO**

Several countries have taken a more active role in promoting EE projects using the performance contracting approach by creating either public or “super” ESCOs that are wholly or partly owned by the state. Often this was done to promote ESCOs generally. Examples include China (pilot EMCs created by the World Bank in Beijing, Shandong, and Liaoning), Poland (MPEC) and Croatia (HEP ESCO), and the establishment of UkrESCO in Ukraine. Such public ESCOs were typically formed when the local ESCO markets were nascent and some public effort was deemed necessary to catalyze them. The advantage of a public ESCO is that there is often no competitive process is required for project development since a public agency is simply contracting with another public entity.

The super ESCO is a special type of public ESCO. Established by the government, it functions as an ESCO for the public sector market (hospitals, schools, municipal utilities, government buildings, and other public facilities) while also supporting the capacity development and project development activities of existing private sector ESCOs. The government, possibly with help from IFIs) capitalizes the super ESCO with sufficient funds to undertake public sector ESPC projects and to leverage commercial financing.

A primary function of the super ESCO is to facilitate access to project financing by developing relationships with local or international financial institutions. The super ESCO may also provide credit or risk guarantees for ESCO projects, or act as a leasing or financing company to provide ESCOs and/or customers with EE equipment on lease or on benefit-sharing terms (Limaye and Limaye 2011).

**Public Sector Energy Efficiency Credit Line**

A public sector EE credit line is a financing mechanism that makes funds available to local banks and financial institutions (FIs) to provide debt financing of EE projects in utilities and public buildings and facilities. The major purpose of such a credit line is to increase the funding available from these lenders for debt financing of municipal EE project investments. These can be managed by a development bank, municipal bank, commercial bank(s), or other FIs.

Dedicated EE credit lines may be established by governments, multilateral or bilateral financial institutions, or governments in cooperation with international donor agencies. The funds provided by the donors or governments to lenders are often leveraged by additional funds provided by the participating banks and/or financial institutions to increase the total amounts available for debt financing.

**Risk-Sharing Facility**

A major barrier to commercial financing of public EE projects is commercial lenders’ perception that EE projects are inherently riskier than their traditional investments. A risk-sharing facility is designed to address this by providing partial coverage of the risk involved in extending loans for EE projects. The facility, essentially a bilateral loss-sharing agreement, includes a subordinated recovery guarantee and might also have a “first loss reserve” to be used to absorb up to a specified amount of losses before the risk-sharing occurs.
A partial risk-guarantee facility, provided by a government, donor agency, or other public agency, can assist municipal utilities and public agencies by: (a) providing them access to finance, (b) reducing the cost of capital, and (c) expanding the loan tenor or grace periods to match project cash flows (Mostert 2010).

Such a facility would also build commercial lenders’ capacity to finance EE projects on a commercially-sustainable basis.

**Commercial Financing, Bonds**

Under this option, municipalities take commercial bank loans (if they are creditworthy and have borrowing capacity) or issue bonds to finance EE investments. This option can mobilize commercial financing which can deliver scale and be sustainable. The elements of competition can help lower financing costs, address overcollateralization/short tenor issues, and allow public agencies to undertake its own procurement/implementation.

This option can work if there are well-developed municipal credit and rating systems, financial institutions who are willing and able to lend to public sector for EE projects, and large municipalities with strong technical capacity willing and able to bundle many EE projects together.

**Vendor Credit and Leasing**

A lease is a contractual arrangement in which a leasing company (lessor) gives a customer (lessee) the right to use its equipment for a specified length of time (lease term) and specified payment (usually monthly). Depending on the lease structure, at the end of the lease term the customer can purchase, return, or continue to lease the equipment. Many types of organizations, including proprietorships, partnerships, corporations, government agencies, religious and non-profit organizations, use leasing throughout the world. Suppliers of energy efficient equipment can provide such equipment under a leasing arrangement, usually with lease payments based on estimated energy savings.

Equipment leases are broadly classified into two types: operating lease and finance or capital lease (Lee 2003). In an operating lease, the lessor (or owner) transfers only the right to use the property to the lessee. At the end of the lease period, the lessee returns the property to the lessor. Since the lessee does not assume the risk of ownership, the lease expense is treated as an operating expense in the income statement and the lease does not affect the balance sheet.

**Leveraging Commercial Financing with Private ESCOs**

At the top of the “financing ladder” for public sector projects described earlier is the development of private sector energy service providers, such as ESCOs that specialize in EE project development and implementation. Private ESCOs can help overcome important barriers to scaling-up implementation of public sector EE projects. They can (a) offer a range of services spanning the energy services value chain and (b) provide the technical skills and resources needed to identify and implement EE opportunities, perform services using performance based contracts (thereby reducing the risks to the municipal utilities and public agencies), facilitate access to financing from commercial lenders, and enable energy users to pay for services out of the cost savings achieved.
Performance contracting refers to EE implementation services offered by private ESCOs under ESPCs. These have the following key attributes (SRC Global 2005):

- ESCOs offer a complete range of implementation services, including design, engineering, construction, commissioning, and maintenance of EE measures, and monitoring and verification of the resulting energy and cost savings.
- ESCOs provide or arrange financing (often 100 percent) and undertake “shared savings” or “guaranteed savings” contracts, such that the payments to the ESCO are less than the cost savings resulting from the project implementation.
- Under the performance contract, ESCOs offer specific performance guarantees for the entire project (as opposed to individual equipment guarantees offered by equipment manufacturers or suppliers) and generally guarantee a level of energy and/or cost savings.
- Payments to the ESCO are contingent upon demonstrated satisfaction of the performance guarantees.
- Most of the technical, financial, and maintenance risk is assumed by the ESCO, thereby substantially reducing the risks to the energy user.

**Comparison of the Financing Options**

Table 4.1 provides a comparative assessment of the key characteristics of the finance and delivery models discussed above.
Table 4.1 - Summary of Characteristics of Financing Options for Public Sector Energy Efficiency Projects

<table>
<thead>
<tr>
<th>Financing Option</th>
<th>Conditions</th>
<th>Pros</th>
<th>Cons</th>
<th>Issues to be addressed in Kosovo</th>
<th>Examples</th>
</tr>
</thead>
</table>
| 1. Budget financing with capital recovery             | • Credit barrier is too high, underdeveloped banking sector, collateralization is difficult  
  • Financing should target new and underdeveloped markets, programs must be efficiently administered, initial subproject results should be intensely disseminated, need viable co-financing  
  • Availability of funding for EE projects | • Easy to implement  
  • Can directly finance municipal entities and central government agencies | • Sustainability may be questionable, even if repayment is obtained through budget financing | • Who will manage and administer the funds?  
  • Is there sufficient implementation capacity? | • Hungary  
  • Lithuania  
  • Armenia, Belarus  
  • FYR Macedonia  
  • Montenegro  
  • Serbia |
| 2. Utility on-bill financing                          | • Requires regulations for utility participation  
  • Strong financial position and financial management of utilities  
  • Payment discipline among public clients, adequate energy pricing and billing practices | • Streamlined repayments, lower repayment risk if risk of utility disconnection,  
  • Builds off of utility relationships and services  
  • Can be done on a sustainable and scalable basis | • Requires changes in utility regulations and billing systems  
  • Creates potential for monopolistic behaviors  
  • Financing may compete with local banks,  
  • Limited experience with heat utilities | • Are Kosovo utilities interested and willing?  
  • Do they have capacity and billing systems for on-bill financing?  
  • What regulatory changes may be needed? | • Brazil  
  • China  
  • India  
  • Mexico  
  • Sri Lanka  
  • Tunisia  
  • U.S.  
  • Vietnam |
| 3. Energy efficiency revolving fund                   | • Insufficient liquidity in banking sector, major aversion to risk among lenders  
  • Use of grant funds as subordinated debt can help mobilize commercial co-financing  
  • TA to disseminate information on EE subproject performance/financial data critical to sustainability  
  • Need for professional, well-incentivized Fund Management Team | • Can be structured to address financing needs and evolving capacity of all public buildings (central and municipal)  
  • ESA option can be very useful for municipalities with poor credit and lack of capacity | • May require new legislation  
  • May be difficult to cover administrative costs of the fund from its revenues | • Needs a strong and capable fund manager or management team  
  • Needs supporting legislative framework for establishment | • Bulgaria  
  • Romania  
  • Armenia |
<table>
<thead>
<tr>
<th>Options for Financing Energy Efficiency in Public Buildings in Kosovo</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>4. Public ESCO or super ESCO</strong></td>
</tr>
<tr>
<td>• Immature private sector ESCO industry, but interest/demand to develop ESCO industry</td>
</tr>
<tr>
<td>• Contracting between public ESCO and public sector entities may be easier than with private sector service providers</td>
</tr>
<tr>
<td>• Can address financing issues and build ESCO capacity</td>
</tr>
<tr>
<td>• Need to create a new organization</td>
</tr>
<tr>
<td>• Need to provide funding</td>
</tr>
<tr>
<td>• Needs to operate efficiently and avoid acting as monopoly</td>
</tr>
<tr>
<td>• Where will such a public ESCO be located?</td>
</tr>
<tr>
<td>• Will donors be interested in funding such an entity?</td>
</tr>
<tr>
<td>• Ukraine Public ESCO (EBRD) Croatia HEP ESCO (WB/GEF), Armenia, Uruguay, EESL (India)</td>
</tr>
<tr>
<td>• Brazil India (municipal infrastructure fund) Mexico Turkey (proposed)</td>
</tr>
<tr>
<td>• Ukraine Public ESCO (EBRD) Croatia HEP ESCO (WB/GEF), Armenia, Uruguay, EESL (India)</td>
</tr>
</tbody>
</table>
### 7. Risk-sharing program (such as partial credit guarantee)
- Well-developed banking sector, banks are liquid and willing to accept some risks but have a perception of high risk with respect to EE projects
- Sufficient market activity to develop project pipeline
- Has worked well in some Central and Eastern European countries
- May scale up commercial financing
- Needs a relatively mature banking sector and eligible borrowers
- Poor experience of WB and USAID in some countries with respect to public agencies
- Is the banking sector mature enough?
- How many municipalities are creditworthy?

| Bulgaria, CEEF (Central/Eastern Europe), China, Croatia, Hungary, Poland |

### 8. Commercial financing, bonds
- Requires well-developed public sector credit and rating systems
- Financiers willing and able to lend to public sector for EE projects
- Large municipalities with strong technical capacity willing to bundle many EE projects together
- Mobilizes commercial financing which can deliver scale and be sustainable
- Elements of competition can help lower financing costs
- Can help address overcollateralization/short tenor issues
- Only makes sense for very large bundles of projects
- Only highly creditworthy agencies can use these schemes
- Relatively high transactions costs
- Are financiers willing and able to lend to public sector?
- How many public agencies are creditworthy and have borrowing capacity?

| Bulgaria, Denmark, India, U.S. |

### 9. Vendor credit, leasing
- Large, credible local and/or international vendors able and willing to finance public EE projects
- Local bank financing available for vendor leasing
- Creditworthy public agencies able to sign long-term vendor contracts
- Public agencies able to retain energy cost savings, pay based on consumption
- Mobilizes commercial financing which can deliver scale and be sustainable
- Can help address overcollateralization/short tenor issues
- Financing and procurement in one contract
- Lease may not count against public debt
- Relies on local banks and leasing companies
- Serves only very creditworthy public agencies
- Vendors must assume substantial debt and offer long-term financing
- Only some building equipment suited for leasing (lighting, SWH, boilers)
- How many public agencies are creditworthy and have borrowing capacity?

| China, EU, U.S. |
| 10. Leveraging commercial financing using private ESCOs/performance contracts | Supportive policies and enabling environment | Mobilizes commercial financing which can deliver scale and be sustainable, | Needs local banks and ESCOs to provide reasonable cost financing and assume credit risk | Are there any private ESCOs in the market? | Are there any private ESCOs and/or municipalities creditworthy for commercial project financing? |
| | Introduction of simpler business models first | Helps address overcollateralization/short tenor issues | Serves only very creditworthy public agencies | 
| | Appropriate financing schemes | ESPC may not count against public debt, public agency shifts technical risks to third party | ESCO industry is difficult to develop | 
| | Early market development through public sector projects | Public procurement issues difficult to address | | 
| | Development of public-private partnership (PPP) models to kick-start market | | | WB China ESCO program |

Source: Adapted by authors from World Bank 2013b
SECTION 5 - ASSESSMENT OF FINANCING AND IMPLEMENTATION OPTIONS FOR KOSOVO

Characteristics of Financing Options in the Kosovo Context

This section reviews the potential applicability of the public sector financing options identified in Section 4 to the public sector in Kosovo. For assessing the suitability and benefits of the financing options, three distinct types of public sector entities are considered:

I. Creditworthy municipalities, or municipal entities with their own budgets;
II. Municipal entities without their own budgets and/or with little or no capacity to implement projects; and
III. Central government entities.

The financing options may have different applicability, advantages, and limitations for each type. Of the 10 options summarized in Section 4 (based on international experience), four were not considered further:

- Utility on-bill financing, because it does not appear that the utilities in Kosovo have the regulatory authority, capacity and interest in offering such services.
- Credit line with development bank, because there is no development bank in Kosovo.
- Commercial financing and bonds, because of the limited capacity to issue bonds and lack of a market for such bonds.
- Vendor credit and leasing, because of the immaturity of the existing market for leasing.

The key characteristics of the other 6 options in the Kosovo context are summarized in Table 5.1.

Narrowing the Financing Options: Rationale and Results

As shown in Table 5.1 six EE financing options can all be applicable to Kosovo, but they are not equally viable in terms of serving the needs of the municipal utilities and public entities. Four of the options do not appear to be suitable for the needs of all public sector entities (municipal and central government) in the short-to-medium term (approximately the next five years). A review of Table 5.1 indicates that:

- While dedicated public sector EE credit lines may be attractive and useful for financing projects using commercial lending, they are limited to serving only a few creditworthy municipal entities that have sufficient borrowing capacity. These financing options will therefore serve the needs of only a small segment of the public sector.
- Similarly, risk sharing or guarantee programs would be limited to creditworthy municipal entities and would not meet the needs of the other municipalities or central government agencies.
- While commercial financing can be leveraged using performance contracting and private ESCOs, such financing options are likely to be available only to creditworthy municipalities or ESCOs with strong balance sheets and borrowing capacity. Such ESCOs do not currently exist in Kosovo – the private ESCO market today is nascent and will take many years’ focused efforts to mature.
### Options for Financing Energy Efficiency in Public Buildings in Kosovo

Table 5.1 – Key Characteristics of the Public Sector Energy Efficiency Financing Options in Kosovo Context

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Budget Financing with Capital Recovery</th>
<th>EE Revolving Fund</th>
<th>Dedicated Public Sector Credit Line</th>
<th>Risk-Sharing Program</th>
<th>Public or Super ESCO</th>
<th>Private ESCOs &amp; Performance Contracting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Financing</td>
<td>Loans and TA; may include some grants</td>
<td>Loans, TA, ESAs</td>
<td>Loans, TA</td>
<td>Guarantees, TA</td>
<td>Loans</td>
<td>Loans</td>
</tr>
<tr>
<td>Public Entities Served*</td>
<td>I, II and III</td>
<td>I, II and III</td>
<td>I only</td>
<td>I and III</td>
<td>I, II and III</td>
<td>I and III</td>
</tr>
<tr>
<td>Management and Governance</td>
<td>Project Implementation Unit (PIU) within MOF</td>
<td>Board of directors</td>
<td>IFI, participating financial institutions</td>
<td>IFI, participating financial institutions</td>
<td>Board of directors</td>
<td>IFI, participating financial institutions</td>
</tr>
<tr>
<td>Project Development</td>
<td>By PIU</td>
<td>Fund management team</td>
<td>Participating financial institutions</td>
<td>Participating financial institutions</td>
<td>Management team of public or super ESCO</td>
<td>Private ESCOs</td>
</tr>
<tr>
<td>Project Implementation</td>
<td>By Type I municipalities and Type III central entities</td>
<td>Type I municipalities; Type III central entities</td>
<td>Type I municipalities</td>
<td>Type I municipalities and Type III central entities</td>
<td>Management team of public or super ESCO</td>
<td>Private ESCOs</td>
</tr>
<tr>
<td>Advantages</td>
<td>Easy to implement</td>
<td>Addresses needs of all three types</td>
<td>Can leverage commercial financing</td>
<td>Can address needs of all three types</td>
<td>Can leverage commercial financing</td>
<td>Can address needs of all three types</td>
</tr>
<tr>
<td></td>
<td>Analogous to some existing models</td>
<td>Multiple windows (including ESA) to address financing needs and evolving capacity of municipalities</td>
<td>Existing credit lines provide experience</td>
<td>Multiple windows to address financing needs and evolving capacity of municipalities</td>
<td>Existing guarantee programs provide some relevant experience</td>
<td>Multiple windows to address financing needs and evolving capacity of municipalities</td>
</tr>
<tr>
<td></td>
<td>Can address all three types</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Can leverage commercial financing</td>
</tr>
<tr>
<td>Limitations</td>
<td>Requires capable PIU</td>
<td>Needs new legislation for implementation</td>
<td>Cannot address needs of Type II municipalities</td>
<td>Cannot address needs of Type II municipalities</td>
<td>Need the creation of new organizations</td>
<td>Need a mature ESCO industry</td>
</tr>
<tr>
<td></td>
<td>Sustainability not assured</td>
<td>Need a strong and capable Fund Management Team</td>
<td>Only serves municipalities or ESCOs that have borrowing capacity</td>
<td>Only serves municipalities or ESCOs that have borrowing capacity</td>
<td>Needs capable management team</td>
<td>ESCOs need to have borrowing capacity</td>
</tr>
<tr>
<td></td>
<td>Needs of Type municipalities &amp; some Type III may not be easily met</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can be Implemented under Current Regulations?</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Source: Authors

* Types of public entities: I – Creditworthy public agencies with their own budgets; II – Public agencies without their own budgets, having poor credit, and/or little or no capacity to implement projects; III – Central government Entities.
The three most applicable options, all of which can meet the needs of a broad segment of the municipal entities and central government agencies, are:

- Budget financing with capital recovery
- Energy efficiency revolving fund
- Super ESCO

These three options should be considered further for financing of public sector EE projects in Kosovo. A description of each is provided below.

**Budget Financing with Capital Recovery**

**Overview**

Then option involves actions by the MOF, with funding provided by a donor agency, to establish a Public Sector EE Financing Facility to finance EE project investments in municipalities and central government agencies that are funded from the national budget. The funds provided are used by these entities to make capital investments in EE projects that will result in energy cost savings.

The recipient public entity is then required to “repay” the investment over a specified period of time from the cost savings generated by the investment project in the form. This will be accomplished by the MOF in the form of reduced budgets for energy bills of the budget agencies in future years (hence the term “budget financing”). The size of the reduced outlay is usually structured to be lower than the energy cost savings. Figure 5.1 shows a typical structure of such a project.

**Figure 5.1 – Budget Financing - Public Sector EE Improvement Project**

**Funds flow**

The flow of funds to pay for EE improvements follows the same flow as the normal appropriations from the MOF. The repayment to the MOF could be complete or partial and may allow public agencies to retain a share of the savings achieved. It would be desirable for MOF to allow the public entities to keep a portion of the savings as an incentive for their active participation and support in identifying and implementing the EE projects. This could
require some changes in public budgeting procedures. The development of such procedures could be supported by TA. Figure 5.2 illustrates the funds flow.

**Implementation**

The program would be implemented by a Program Implementation Unit (PIU) within the MOF. The PIU could de facto carry out tasks such as project identification, review of applications, and monitoring and reporting as well as assisting public entities with project preparation activities. These include review of feasibility studies, preparation of detailed design and bidding documents as well as supervision of construction activities.

This option requires the establishment of a PIU within MOF and training and capacity building of the PIU staff to undertake the activities envisioned. Some TA could be provided by KEEA, but the MOF would have to assume major responsibilities for project implementation.

The funds will be lent by the MOF to public agencies by entering into LAs. The funds will be provided to municipalities and central government agencies that have capabilities to manage implementation of EE projects, and demonstrated willingness to commit to repay the loans from energy savings.

The MOF will provide loans for projects undertaken by these borrowers that will be treated as debt, with fixed repayment obligations to be made within their budget provisions in future years. The PIU will negotiate LAs with the borrowers that will define the terms of the loans, determined by MOF or in negotiations between the MOF and donors.

For public agencies that are depending entirely on the central budget, financing conditions and mechanisms that would enable them to participate would have to be developed during the detailed design of the financing mechanism. For example, some funds might be provided as grant funding to central government agencies.

**Technical Assistance**

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8 It may be possible to locate the PIU in an organization other than MOF, provided there is close coordination with MOF.
Certain additional services may be provided to the borrowers by the PIU as TA. Such services may include: conducting a preliminary screening to identify and define the general scope of the EE projects; providing standard bidding documents for services related to project implementation; and providing measurement and verification (M&V) protocols. The borrowers will be responsible for engaging energy service providers (as needed), implementing the project, properly maintaining the systems, and repaying the loan in accordance with the terms of the LA. The repayment installments will be designed to allow borrowers to repay the investment costs and, if applicable, service fee from the accrued energy cost savings. TA may be provided by KEEA with respect to energy audits, project implementation support, and M&V protocols.

Energy Efficiency Revolving Fund

The basic structure of an EERF is illustrated in Figure 5.3. Key design elements that need to be considered to implement such a fund in Kosovo are discussed below. Annex B provides additional information on EERFs and the various financing windows that have been created under EERFs. For the Kosovo EERF (KEERF), two major windows will be included - debt financing and energy service agreements (ESAs). These are further discussed below.

Figure 5.3 – General Structure of an Energy Efficiency Revolving Fund

Source: World Bank 2014b

Existing Funds

It was pointed out during the EE Roundtable in Pristina in April that there are a number of existing funds in the Western Balkans and that perhaps one of these may provide the foundation for an EERF. The World Bank reviewed the existing funds to assess such an option. The existing funds are summarized below and in Table 5.2.

EFSE: European Fund for Southeast Europe: Operational since 2005, EFSE specializes in refinancing micro and small enterprise as well as housing loans of financial institutions in Southeast Europe. The fund provides investment capital, general funds and TA.

WB EDIF Funds: The Western Balkans Enterprise Development & Innovation Facility (WB EDIF), funded by the EU, aims at improving access to finance for small and medium-sized enterprises (SMEs) in the Western Balkans. It has three financing facilities:

ENIF: Enterprise Innovation Fund is a venture capital fund that aims at reinforcing the financial structure of SMEs resulting in a strong and bankable balance sheet. ENIF has an investment portfolio consisting of innovative SMEs at various stages of development.
Table 5.2 – Existing Funds

<table>
<thead>
<tr>
<th>Fund</th>
<th>Target Sectors</th>
<th>Suitability for Public Sector EERF</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Fund for Southeast Europe</td>
<td>SMEs, households</td>
<td>Not suitable because the primary focus is on SMEs and households and not on public buildings</td>
</tr>
<tr>
<td>Enterprise Innovation Fund</td>
<td></td>
<td>Not suitable because their primary focus is on SMEs and not on public buildings</td>
</tr>
<tr>
<td>Enterprise Expansion Fund</td>
<td>SMEs</td>
<td>Not suitable because their primary focus is on SMEs and not on public buildings</td>
</tr>
<tr>
<td>WB EDIF Guarantee Facility</td>
<td>SMEs</td>
<td>Not suitable because they can serve only creditworthy municipalities with borrowing capacity through commercial banks and may not be able to meet the financing needs of other municipalities and central government facilities</td>
</tr>
<tr>
<td>Green for Growth Fund</td>
<td>Households, businesses and municipalities</td>
<td></td>
</tr>
<tr>
<td>Municipal Infrastructure Development Fund</td>
<td>Municipalities</td>
<td>Not suitable because they can serve only creditworthy municipalities with borrowing capacity through commercial banks and may not be able to meet the financing needs of other municipalities and central government facilities</td>
</tr>
</tbody>
</table>

**ENEF: Enterprise Expansion Fund** supports established SMEs with a high-growth potential by providing equity finance to support their development and expansion. ENEF provides primarily equity and quasi-equity as well as convertible loans to support their growth by providing liquidity.

**WB EDIF Guarantee Facility** provides guarantees to financial intermediaries to incentivize them to build up new SME loan portfolios and thereby improve SMEs’ access to bank lending.

**GGF: Green for Growth Fund, Southeast Europe:** Initiated in 2009, GGF is a public-private partnership (PPP) to promote EE and RE in its target region and to reduce CO2 emissions. It provides refinancing to financial institutions (FIs) providing loans to households, businesses, and municipalities for energy efficiency measures or renewable energy projects and makes direct investments in non-FIs with EE and RE projects. It primarily works with institutions that provide debt financing to creditworthy borrowers.

**MIDF: The Municipal Infrastructure Development Fund:** MIDF’s is a financing vehicle dedicated to provide debt financing for municipal infrastructure projects in the Western Balkans. MIDF is funded by contributions from the Austrian Ministry of Finance, the German Federal Ministry of Cooperation and Development, EBRD, KfW, the Swiss Secretariat for Economic Affairs (SECO), and Frankfurt School of Finance and Management.

The EFSE and the three WB EDIF funds are targeted at SMEs and would therefore not be suitable for public buildings. The GGF and MIDF do consider municipalities as potential borrowers, but are essentially credit lines that provide financing through intermediary banks. These banks will finance only creditworthy municipalities with borrowing capacity. Therefore, these funds will not be suitable for central government buildings or municipalities that are not creditworthy or have no borrowing capacity. Also, these two funds have not financed any municipal projects in Kosovo.

There is therefore a need for an EERF that can serve the needs of all municipalities and central government buildings. The discussion below highlights the characteristics of the EERF.
Legal Framework

The establishment of an EERF is likely to require legislative action. The Government of Kosovo is currently considering the enactment of new legislation to specifically authorize the establishment of such a fund.

However, it is important that the KEERF focusing on financing public sector EE projects should be established as a new, independent organization that would serve as the Fund administrator. Consequently, if the GOK decides to establish an EERF, the relevant legislation should specify its legal organization and ownership. Options include creating the fund under an existing ministry, KEEA, or existing state-owned company; creating a new legal entity (independent corporation or new statutory agency); not-for-profit entity; or establishing a public-private partnership (PPP). The preferred option would be to create a new independent corporation or a new statutory agency.

Fund Management and Governance

The key elements of management and governance of the KEERF include the following:

- Oversight arrangements
- Fund manager selection
- Monitoring and evaluation
- Reporting

Oversight Arrangements

Although oversight arrangements vary, they typically include all relevant ministries that have some authority over EE, such as those responsible for finance, construction, economy/energy, environment, or urban/regional development. Options for oversight arrangements are listed below:

- For the Bulgarian Energy Efficiency Fund, or BEEF, oversight is by a management board (MB) appointed by the national government;
- The Renewable Resources and Energy Efficient (R2E2 Fund) in Armenia is governed by a government-appointed board of trustees and comprises representatives from the government, private sector, NGOs and academia;
- The Romanian Energy Efficiency Fund (FREE) was governed by a government-appointed board of administration consisting of seven members, of whom five from the private sector representatives; and
- Salix Finance in the U.K. has a three-person board, two of which are from the private sector.

If and when Kosovo establishes the KEERF, it is strongly recommended to have representation from both the public and private sectors.

The main functions of the oversight body will be setting the investment strategy and policy of the fund, hiring the fund management team, establishing the overall criteria for selecting projects, approving the annual business plans and budgets formulated by the management team, preparing and submitting an annual financial report to the government, and assuring that the fund is operating in compliance with national EE strategy and plans.

Fund Manager Selection

Reviews of international experience with EE funds (World Bank 2014b) have identified a number of options for the choice of a fund manager, including an existing government
agency or development bank, a utility, or a special directorate related to municipal services or building management. Alternatively, a new organization may be created to manage the fund—an independent agency, a new statutory authority, a public corporation, or a PPP. Any of these types of organizations could also hire a fund manager or management team under a contract.

In Bulgaria, an independent fund management team was appointed (World Bank 2010). This team was competitively selected and included a consortium of three firms (Econoler International, EnEffect Consult, and Elena Holding). In the case of the Armenia R2E2 Fund (World Bank 2012), the government appointed an executive director (ED) and supporting financial and technical staff to manage the fund.

Whatever form the fund manager takes, the fund management team must have expertise in a number of areas, including knowledge and understanding of EE technologies and options; skills in market assessment and pipeline development; capabilities in credit analysis, financial analysis, and project appraisal; and understanding of EE and energy services markets.

**Debt Financing Window**

For creditworthy municipalities that can borrow and are able to identify, design, and implement projects, the KEERF can offer debt financing. One of the advantages of an EERF is that—unlike commercial financing, which may require an equity contribution from the borrower—the Fund may provide up to 100 percent debt financing. Also, the fund may not require the type of collateral typically requested by commercial borrowers because the public agencies may not be legally able to pledge public assets.

The tenor (repayment period) of the loan will be based on (i) the type of project and (ii) the anticipated cash flows resulting from the energy cost savings; usually the repayment period will be structured in such a way that the loan repayments are less than the energy cost savings. It is anticipated that KEERF will longer tenors than typical commercial bank loans.

**Energy Services Window**

This is an innovative feature of EERFs that can be very effective for public agencies that lack the capacity to borrow funds or to effectively implement EE projects. An ESA can offer a full package of services to identify, finance, implement, and monitor EE projects. The public agency is usually required to pay some or all of its baseline energy bill into an EERF-established escrow account to cover the investment cost and associated fees during the contract period. Figure 5.4 illustrates the basic concept of a public agency’s cash flows under the ESA, with payments equal to its baseline energy bill during the contract period.

For example, let us assume that the monthly energy bill for the public agency prior to the EE project implementation is €10,000. The ESA will specify this as the baseline amount, and the public agency will agree to pay this amount each month into an escrow account for the duration of the ESA, which is assumed to be five years. The EERF will then make the EE project investment (assumed in this example to be €150,000). This investment will reduce the energy costs by 30 percent, to €7,000 per month. During the five-year ESA period, the agency will pay into the escrow account (i) its monthly energy bill of €7,000 and (ii) the remaining €3,000 per month, thus allowing the fund to recover its investment (plus interest and fees). Following the five-year period, the agency will be able to retain its energy cost savings.

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9 The Consortium includes an EE consultancy (Econoler International), a Foundation (Center for Energy Efficiency EnEffect), and a non-banking financial institution (Elana Holding PLC).
savings and its overall energy bill will fall to the assumed €7,000.
In some cases, the contract duration is fixed; in other cases, the contract can be terminated after an agreed number of payments have been made to the EERF—thereby offering a greater incentive for the agency to save more energy. Either way, one of the main advantages of the ESA model is that repayments generally do not count as public debt, allowing public entities that are not allowed to borrow, or municipalities that do not have sufficient debt capacity, to implement EE measures. In this way, the model also helps public agencies to use their limited budget/debt space for higher-priority investments while still being able to implement EE. In addition, the repayments to the KEERF and energy payments can be bundled together, providing some added leverage to the Fund to cut off the energy supply should the public agency default on its ESA repayment obligations.

**Technical Assistance**

An important feature for the success of the KEERF is the TA provided. The types of TA that the KEERF may provide could include the following:

- Program marketing to and capacity building of the target public agencies to address the information and knowledge gaps related to EE, build demand for financing, and improve the sustainability of energy savings.
- Developing procedures that help public agencies engage ESCOs under public-private partnerships such as performance-based contracts; preparing performance-based bidding documents for procurement of various elements of project implementation services; and refining these bidding documents based on the implementation experience.
- Identifying way to bundle procurements by multiple public entities implementing similar projects, thus reducing transaction costs and equipment costs through bulk purchases. Under some financing arrangements, the KEERF can even conduct the preliminary audit, procure the service provider, and monitor the project on behalf of the clients.
- Identification, assessment, and recommendation of changes, if needed, in rules for public accounting, budgeting, and procurement to facilitate the financing of EE projects and procurement of EE services.
- Carrying out capacity building for ESCOs and other market actors to enhance
their ability (i) to conduct energy audits and (ii) to screen, design, evaluate, appraise, finance, implement, and measure EE investments in the public sector.

- Developing or adapting appropriate methodologies for M&V and providing M&V training to public agency staffs and service providers.
- Developing the terms and conditions of the ESAs with public agencies for the ESA option, including establishment of the baseline conditions and identification of the baseline changes that would require an adjustment of the fixed annual payments.

**Procurement of Implementation Services**

Under the ESA option, the KEERF can engage private service providers to provide some implementation services using simple performance-based contracts. This approach can help transfer some of the project implementation risk to the private sector. It can also help build the capacity of the ESPs and facilitate the development of an energy services market (World Bank 2010b).

**Organization Structure**

The organizational structure of a typical EERF is illustrated in Figure 5.5.

**Investment Models**

The step by step implementation process for the two basic fund models – debt financing and ESAs – is shown in Table 5.3.

**Table 5.3 - Implementation Steps for Fund Investment Models**

<table>
<thead>
<tr>
<th>Step</th>
<th>Model 1: Loans</th>
<th>Model 2: Energy Services Agreements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Fund manager prepares and announces the availability of loan funds for EE projects in municipalities and other public entities and invites Expressions of Interest (EOIs) from municipalities and public facilities to borrow funds for projects.</td>
<td>Fund manager prepares and announces the availability of the ESAs for public sector EE projects and invites EOIs from municipalities and public facilities to participate in such agreements.</td>
</tr>
<tr>
<td>Step 2</td>
<td>Fund Manager receives applications from municipalities and public entities.</td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td>Fund Manager conducts preliminary screening of EOIs and selects promising candidates.</td>
<td></td>
</tr>
<tr>
<td>Step 4</td>
<td>Fund Manager conducts preliminary assessment of energy savings opportunities including a walk-</td>
<td></td>
</tr>
</tbody>
</table>
If walk-through audit shows EE opportunities, a project design is prepared by the borrower; the PIU may provide assistance in the preparation of the project design. The borrower needs to obtain approval from MOF for the loan. An LA is then negotiated between the Fund and the borrower. The LA specifies the responsibilities of the Fund and the borrower, the EE measures to be implemented, the total project costs and the amount to be loaned by the Fund, assignment of collateral, the length of the agreement, the terms of the loan repayment, the selection of the M&V methodology and M&V agent, etc. The LA also specifies the responsibilities of the borrower for conducting the project implementation activities, the services that are to be provided by the Fund to assist the borrower with implementation, and the terms for payment, if any.

### Step 5

If walk-through audit shows EE opportunities, an ESA is negotiated between the Fund and the facility. The ESA specifies that the facility will pay the Fund a fixed amount equal to between 95 and 100 percent of the baseline energy costs for a fixed period of time as determined and agreed to after a detailed assessment is conducted of the facility's baseline energy use and costs and operating characteristics. The ESA also specifies the adjustments to be made to the fixed payments in case of any changes to the facility characteristics, operating conditions, or other baseline parameters. An ESA would most likely not be considered as a liability on the balance sheet and therefore may not be part of the entity’s debt ceiling.

### Step 6

A detailed audit is commissioned to identify the investment cost, energy savings, and implementation requirements.

### Step 7

The Fund prepares performance-based bidding documents for project implementation services and provides these to the borrower.

### Step 8

The borrower approves the bidding documents and the procurement of the service providers is conducted either by the borrower or by the Fund as specified in the LA. The contracts for the project implementation services are partly performance-based as specified in the bidding documents.

### Step 9

The energy service providers implement and commission the project under the supervision of the borrower or the Fund staff.

### Step 10

The Fund conducts the procurement of the service providers. The contracts for the project implementation services are partly performance-based as specified in the bidding documents.

### Step 11

The borrower repays the loan over the term of the agreement from the savings achieved.

The Fund receives the fixed payments from the facility as specified in the ESA (adjusted, if appropriate) for the specified time period. The Fund pays the facility’s energy bills and retains the remaining amount to cover its investment and service costs.

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The investment models for the debt financing option and the ESA option are shown in Figures 5.6 and 5.7.
Table 5.4 – How KEERF Can Addresses EE Implementation Barriers

<table>
<thead>
<tr>
<th>Barrier</th>
<th>How Addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited number of creditworthy municipalities and borrowing capacity</td>
<td>Finance projects directly with creditworthy municipalities with borrowing capacity and engage in ESAs with others</td>
</tr>
<tr>
<td>Restrictive budgeting and procurement regulations and procedures</td>
<td>Since the fund will most likely be considered a public entity, it can enter into loan agreements or ESAs with public agencies without facing the restrictive regulations/procedures</td>
</tr>
<tr>
<td>Low energy tariffs</td>
<td>Provide longer tenor on loans and longer terms for the ESAs to allow public agencies to repay the loans from cost savings</td>
</tr>
<tr>
<td>Norm-based billing systems for heating</td>
<td>Install heat meters in the selected buildings and measure consumption before and after implementation of the EE project</td>
</tr>
<tr>
<td>Relatively high interest rates charged by commercial banks</td>
<td>Provide lower interest rates than commercial banks and engage in ESAs</td>
</tr>
<tr>
<td>Small project sizes, high project development and transaction costs)</td>
<td>Standardize agreements and procedures; aggregate similar projects across public agencies</td>
</tr>
<tr>
<td>Lack of development of energy service providers and performance-based contracting</td>
<td>Engage energy service providers in project implementation and develop their capacity for performance-based contracting</td>
</tr>
<tr>
<td>Low existing comfort levels</td>
<td>Work only with agencies that meet minimum comfort level standards; provide longer tenor loans and longer term ESAs to assure desired comfort levels and yet allow the public agencies to repay the loans or pay the ESA payments</td>
</tr>
</tbody>
</table>

Source: World Bank 2014b

Super ESCO

There has been much discussion about the benefits of the ESCO model using performance
contracting to help implement EE projects (Singh et al. 2010). Unfortunately, implementing the ESCO model in developing countries has been challenging for many countries (Limaye et al 2016).

**Limitations on Growth of ESCOs in Developing Countries**

The growth and development of the ESCO industry has often been constrained by a number of barriers, many of which are also present in Kosovo:

- There are no ESCOs in Kosovo. New ESCOs would have a small capital base and have difficulties accessing project funding from commercial financial institutions (FIs) because they can only provide limited equity financing.
- Due to the immaturity of the EE market, the costs of project development are relatively high, and most small ESCOs are likely to find it difficult to finance project development costs.
- The ESCO model is relatively new, and ESCOs have not yet developed good credibility with public sector energy users.
- The concept of project financing for ESCO projects is not commonly accepted by FIs. A major reason for this is that FIs require collateral and are generally unwilling to accept the savings stream generated by the project as appropriate collateral.
- The FI’s in Kosovo have limited knowledge and understanding of EE projects and the ESPC concept.
- FIs also perceive EE projects as inherently more risky than other investments, and generally require a large proportion of equity funding from the ESCO for a project.

Also, large-scale implementation of EE projects in the public sector in Kosovo is constrained by a number of barriers:

- Facility managers in public buildings generally do not have a good understanding of the opportunities, costs and benefits of EE options.
- There is very limited technical capacity in public agencies for conducting energy audits, designing and engineering projects, and/or contracting with and managing ESCOs or other energy service providers to implement projects.
- There is generally little or no incentive to staffs of public facilities to save energy as the resulting cost savings may simply lead to reduced operational budgets in future years (which may actually represent a disincentive to save energy).
- Public sector contracting and procurement rules are often rather restrictive; for example, they require the selection of the low bidder which may make it difficult to adopt the performance contracting approach.
- Responsibilities for capital and operating budgets in public agencies are often dispersed, making it difficult to deploy funds from capital budget to reduce operating costs.
- Commercial banks in Kosovo are likely to be unwilling to provide project financing for ESCO projects with public agencies.

**Kosovo Super ESCO**

The concept of a Super ESCO has evolved as one of the mechanisms for overcoming some
of the limitations and barriers hindering the large-scale implementation of EE projects. The Super ESCO is a special case of a public ESCO. It is established by the Government\textsuperscript{10} and functions as an ESCO for the public sector market, including hospitals, schools, municipalities, government buildings, and other public facilities. It also supports capacity development and project development activities of existing private sector ESCOs including helping create new ESCOs (Limaye and Limaye 2011).

The GOK, with the assistance of the World Bank and/or other donors, can capitalize the Kosovo Super ESCO (“KESCO”) with sufficient funds to undertake public sector ESPC projects and to leverage commercial financing. A primary function of KESCO will then be to facilitate access to project financing by developing relationships with local or international financial institutions. KESCO may also provide credit or risk guarantees for ESCO projects, or act as a leasing or financing company to provide ESCOs and/or customers energy-efficient equipment on lease or on benefit-sharing terms.\textsuperscript{11}

Figure 5.8 illustrates the possible structure of KESCO.

**Figure 5.8 – Possible Structure of KESCO**

![Possible Structure of KESCO](image)

*Source: Limaye 2013b*

The World Bank study of the international experience in public procurement of EE services (Singh et al 2010) identified the Super ESCO as a potentially viable model for developing countries. KESCO may be uniquely positioned to overcome a number of the barriers faced by smaller ESCO companies. With its size and credibility as a public institution, KESCO can have the capability to support the growth of a nation’s private domestic ESCO business and can have the capacity to provide financing for EE projects.

A Super ESCO can have a unique ability to target the largely untapped EE market in the public sector. The EE potential in the public sector is generally substantial, but the implementation of energy savings programs is complicated by numerous factors, including a lack of commercial orientation of public agencies, limited incentives to lower energy costs,

\textsuperscript{10} A Super ESCO may also be established by a private sector organization, an NGO, or by a PPP.

\textsuperscript{11} The discussion in this section is extracted from Limaye and Limaye 2011.
complex and strict budgeting and procurement procedures, and limited access to budgetary or commercial project financing. Many public agencies face budget constraints and often focus on the upfront cost as a matter of necessity.

KESCO will also be assigned a major responsibility to help build the capacity of the local private sector ESCOs, and create a competitive private market for ESCO services. An appropriate role for KESCO will be to engage private ESCOs as subcontractors for parts of the implementation (such as installation, commissioning and performance monitoring), thereby helping to build their capacity. KESCO may also be in a position to arrange financing for small private ESCOs to help them implement projects and build their capacity and credentials.

The payments from the municipalities and other public clients for the services provided by KESCO may need to be secured through a payment security mechanism such as an escrow account. For central government agencies, KESCO may sign a framework agreement with the MOF (or the Ministry responsible for payment of the energy bills) to secure payments from the energy savings generated by the EE projects.

Information on a number of Super ESCOs are provided in Annex C.

**How KESCO Can Address EE Financing Barriers?**

The key contributions that KESCO can make to the scaling up of EE project implementation are summarized in Table 5.5.

**Table 5.5 - How KESCO Can Address Barriers to Implementation in the Public Sector**

<table>
<thead>
<tr>
<th>BARRIERS TO EE PROJECT IMPLEMENTATION IN THE PUBLIC SECTOR</th>
<th>HOW KESCO CAN ADDRESS THESE BARRIERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low awareness and interest on the part of public agencies in EE projects</td>
<td>KESCO can conduct &quot;marketing campaign&quot; to increase awareness and interest</td>
</tr>
<tr>
<td>Zero budgeting policy may provide little incentive for saving energy costs</td>
<td>KESCO can develop incentive mechanisms for public agencies</td>
</tr>
<tr>
<td>Budgeting Issues for public agencies - Capital Expenditure vs. Operating Expenditure</td>
<td>Agency can avoid issue by having project financed by a KESCO</td>
</tr>
<tr>
<td>Lack of procurement regulations that would allow ESCOs and Performance Contracting</td>
<td>Contracting with a KESCO can overcome this problem</td>
</tr>
<tr>
<td>Limited capacity in public agencies for performance contracting using ESCOs</td>
<td>KESCO can develop standard contracts customized for public agencies</td>
</tr>
<tr>
<td>Lack of interest on the part of local financial institutions to fund public sector projects</td>
<td>Financing can be provided by KESCO</td>
</tr>
<tr>
<td>Local financial institutions generally unwilling to provide &quot;project financing&quot; for EE projects</td>
<td>KESCO can provide &quot;project financing&quot; for public agency EE projects</td>
</tr>
<tr>
<td>Private ESCOs unwilling to invest in public sector projects</td>
<td>KESCO can invest in public agency EE projects</td>
</tr>
<tr>
<td>Public agencies not used to contracting with private sector for energy services</td>
<td>Public agencies may find it easier to contract with a KESCO</td>
</tr>
</tbody>
</table>

*Source: Adapted by World Bank from Limaye and Limaye, 2011*

**The Potential Role of IFIs and Donors**

For all three shortlisted financing options, IFIs and donors can play a major role in their establishment and operation in three ways: (a) financial assistance, (b) capacity building, and (c) other technical assistance.


Financial Assistance

Financial assistance may be provided in the form of loans, grants and guarantees. The loans would have the structures and characteristics of typical IFI loans, with sovereign guarantees. IFIs may also provide or arrange for grant funds (from the Global Environment Facility, for example). Another financing option would be risk-sharing facilities (such as partial credit or risk guarantees) to the EERF or to the public or super ESCO.

Capacity Building

One of the most important ways in which IFI can assist is through TA for capacity building. TA may be provided to:

- **PIU** – the TA would address training of PIU staff to build their capacity to manage the financing and implementation of the EE projects. The TA would include training related to EE technologies and relevant implementation strategies; basic concepts and tools for ESPCs; guidelines and procedures for M&V of energy savings; and monitoring and reporting of the overall program results to the financing sources. In addition, in the case of the Budget Financing and EERF, the capacity building TA may also include funding for the initial set-up, administration and operation of the PMU, and for purchase of equipment for auditing, data collection, and measurement and verification.

- **Municipalities** – to help mayors, city councils, utility executives, facility managers, and facility engineers understand the need for and the importance of EE implementation, and to obtain information on the technical options for EE in municipal utilities and public buildings and facilities; also to conduct energy audits and develop EE Action Plans.

- **Central government agencies** – to help facility managers and engineers identify the opportunities for EE implementation in their buildings, conduct energy audits, and develop EE Action Plans.

- **Banks and financial institutions** – to provide information on the characteristics of EE projects, implementation business models, financial and technical appraisal, M&V, and business opportunities in financing EE projects.

- **Energy service providers** – to build their capacity to develop projects; conduct energy audits; screen, design, evaluate, appraise/finance, implement, measure and verify EE investments in the public sector; and understand the perspectives of banks and financial institutions, M&V protocols, and preparation of “bankable” project proposals.

- **M&V agencies** – to create the M&V infrastructure and provide international protocols and supporting tools for conducting M&V of EE projects.

Other Technical Assistance

IFIs may also provide other types of technical assistance to facilitate the scaling-up of financing of EE projects. This may include (a) providing templates for conducting energy audits and (b) developing standard contract terms and conditions for ESPCs, customized Kosovo-specific M&V protocols, and a M&V User Guide.
SECTION 6 - MOVING FORWARD

Advantages and Limitations of the Three Options

A summary of the advantages and limitations of Budget Financing, KEERF and KESCO is provided in table 6.1.

Table 6.1 – Comparison of Public Sector Financing Options

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Budget Financing</th>
<th>KEERF</th>
<th>KESCO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of financing</td>
<td>Loans and TA; may include some grants</td>
<td>Loans, TA, ESAs</td>
<td>Loans, TA, ESAs</td>
</tr>
<tr>
<td>Governance and management</td>
<td>PIU</td>
<td>Board of Directors</td>
<td>Board of Directors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fund management team</td>
<td>KESCO management team</td>
</tr>
<tr>
<td>Project development</td>
<td>PIU</td>
<td>Fund management team</td>
<td>KESCO management team</td>
</tr>
<tr>
<td>Project implementation</td>
<td>Public agencies</td>
<td>Public agencies (for debt financing)</td>
<td>KESCO management team</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fund management team (for ESAs)</td>
<td></td>
</tr>
<tr>
<td>Sustainability</td>
<td>Based on GOT decisions</td>
<td>Yes, due to revolving investment capital and fees to cover operating costs</td>
<td>Yes, due to commercial operations and leverage of private financing</td>
</tr>
<tr>
<td>Repayment risk</td>
<td>None</td>
<td>Assumed by KEERF</td>
<td>Assumed by KESCO</td>
</tr>
<tr>
<td>Advantages</td>
<td>Easy to implement</td>
<td>Can address needs of all public agencies</td>
<td>Can address needs of all public agencies</td>
</tr>
<tr>
<td></td>
<td>Analogous to some existing models</td>
<td>Multiple windows to address financing needs and evolving capacity of public agencies</td>
<td>Multiple windows to address financing needs and evolving capacity of public agencies</td>
</tr>
<tr>
<td></td>
<td>Can serve all public agencies</td>
<td>ESA model useful for smaller and weaker public agencies</td>
<td>Can provide ESAs and introduce ESPCs</td>
</tr>
<tr>
<td></td>
<td>Does not require any investment from the public agencies</td>
<td>Helps introduce ESPCs and build local ESCO industry</td>
<td>Can help build capacity of private sector ESCOs</td>
</tr>
<tr>
<td>Limitations</td>
<td>Requires active participation of the MOF</td>
<td>Need legislation for implementation</td>
<td>Need legislation to create a new state-owned enterprise</td>
</tr>
<tr>
<td></td>
<td>May need changes in budgeting procedures</td>
<td>Need strong, capable Fund management team</td>
<td>Need strong, capable KESCO management team</td>
</tr>
<tr>
<td></td>
<td>Requires capable PIU</td>
<td>May need payment security mechanism to assure payments for services</td>
<td>Need to develop payment security mechanism to assure payments for services</td>
</tr>
<tr>
<td></td>
<td>Sustainability is not assured</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are legislative changes needed?</td>
<td>Yes</td>
<td>No, requires new legislation; may require creation of a new entity.</td>
<td>No, requires new legislation and creation of a new state enterprise</td>
</tr>
</tbody>
</table>

Source: Authors
Moving Forward on the Public Sector EE Financing Agenda

Pursuing any one of the three potential options will require deliberate efforts by the government to:

- Identify the sources of the needed investment capital
- Secure the commitments from IFIs as appropriate
- Implement the needed legislative and regulatory initiatives
- Design the delivery system
- Build implementation capacity
- Leverage private sector participation.

The GOK should select one of the options for implementation only after a review and consultation with all relevant stakeholders – including government officials, mayors and city councils, private sector representatives, banks and financial institutions, consumer groups, and the IFI community. The next step would then be the detailed design and implementation planning for the selected option.

In view of the analysis and state of the Kosovo market, the World Bank recommends creating a dedicated KEERF for the public sector, and focusing its initial efforts on financing EE renovation of municipal and central government buildings. This would fill a critical gap in public sector EE financing in Kosovo and help address perhaps some of the most pressing public sector needs.

Possible Funding Structure

A preliminary concept for the proposed finding structure of the KEERF is shown in Figure 6.1 and summarized below:

- The KEERF could be capitalized with equity of €5 million. The equity sources could be the EU or funds such as the Green Climate Fund (GCF), Global Environment Facility (GEF), government contributions, or possibly other donors.
- The KEERF could also be eligible for concessional debt financing of €5 from IFIs such as the World Bank, KfW or other IFIs.
- The KEERF can be staffed with a small permanent Fund staff with use of consultants.
- The fee structure to cover administrative and overhead costs (prelim audit,
procurement, financial structuring, oversight, etc.) will be established. It is expected that the initial annual costs would be about €300,000.

Results

The KEERF would make investments in EE projects of €1.0 million in Years 1-4, increasing to €1.5 million per year (Years 5 to 6), €2.0 million (Years 7-10) and €2.5 million each year beyond. The typical simple paybacks would be in the range of about 7 years and the KEERF would be likely to achieve breakeven status in terms of covering its administrative and overhead costs and fees from its revenues from Year 4 onwards. The KEERF could invest €5.5 million by Year 5 and it is assumed that it will need recapitalization of about €10 million in Year 6.

Estimated results based on a preliminary financial model would be:

- Cumulative project investments by Year 15 – €27.5 million
- Net equity after Year 15 – €4.1 million
- Annual energy savings – 41.0 GWh
- Annual government budget savings – about €4 million
- Lifetime energy savings – 617 GWh
- Lifetime GHG reductions – 326,850 tons of CO₂e
- Increase in green employment – about 500 jobs.

Roadmap for Establishing the KEERF

The major steps in establishing the KEERF are shown in Figure 6.1.

**Figure 6.1 – Road Map for Establishing the KEERF**

1. Obtain government commitment, adopt legislative initiative, and establish legal framework for the EERF
2. Develop a reliable and sustainable funding source
3. Define fund objectives and target markets
4. Establish the governance structure for the fund
5. Select the Fund Manager (or Management Team) and appoint key staff
6. Define the financing mechanisms to be deployed, including TA and other services
7. Identify and document eligibility criteria
8. Define the operating rules and procedures and the application forms; prepare the Operations Manual
9. Develop marketing strategy and approach; develop a project pipeline
10. Develop simple performance-based business models and engage private ESPs to provide a range of implementation services
11. Develop approaches for project aggregation to reduce transaction costs
12. Define the monitoring, reporting, and evaluation procedures

*Source: Adapted from World Bank 2014b*
SECTION 7 - REFERENCES


World Bank. 2013a, National Building Energy Efficiency Study for Kosovo, prepared by Eptisa, Washington, DC.


ANNEX A – KEY ELEMENTS AND POTENTIAL CHANGES IN THE KOSOVO LEGISLATIVE FRAMEWORK

Key Elements of the Existing Legislative Framework

The major elements of the existing primary and secondary legislation relevant to EE implementation are summarized below:

**Law on Energy Efficiency**

Obligates MoED and municipalities to prepare EE action plans and set up the EE Agency and fund EE initiatives.

As far as public building stock is concerned, the Law sets new responsibilities for municipalities regarding energy efficiency, water management, and other related issues. In addition, the law states that the energy and water responsibilities associated with educational institutions, public health organizations, and social services, along with environmental protection, should be shared between municipal and central authorities. The municipality is also responsible for the design and implementation of regional policies related to energy, water, and other issues, as they are an important attribute to national energy policies.

A notable deficiency within the Law is that it does not provide incentive measures for efficient energy consumers nor does it enforce penalty provisions for failing to comply with the Law or for disregarding EE objectives. Furthermore, the Law foresees an Energy audit as a systematic procedure to obtain: (i) adequate knowledge of the existing energy consumption profile of a building or group of buildings, of an industrial operation, or of a private or public service; (ii) identification of opportunities for cost-effective energy savings; and (iii) reports on the findings.

**Kosovo Energy Efficiency Agency**

Established in 2011 to implement the Law on Energy Efficiency. Headed up by a Chief Executive Officer and consists of 3 divisions: the Planning Division, the Promotion and Project Development Division, and the Monitoring and Reporting Division.

**NEEAP 2010-2018**

As committed under the Energy Community Treaty, indicative targets for EE savings set at 9 percent by 2018; updated every 3 years.

**Law on Energy**

Approved in October 2010: Determines EE targets, encourages advanced metering systems, provides EE policy framework and subsequent implementation.

Regarding buildings, this law states that the Ministry should, among other things, foster improvements in the energy efficiency level of buildings, and establish requirements for energy efficiency certification of buildings.
Law on Construction

Contains important features related to energy performance of buildings including building code norms for new and renovation projects, implementation of EE measures, and certificate of compliance with EE measures.

Law on PPP and Concessions

States that the duration of a Public-Private Partnership shall be set forth in the corresponding Agreement, and that duration of a PPP shall be reasonably related to and reflect: (i) the life-cycle of the public infrastructure; (ii) rate of return and (iii) value-for-money of each individual PPP.

Regarding financial rights, the law stipulates that a Private Partner shall have the right to charge, receive or collect tariffs, fees and any other charges for the use of the Public Infrastructure or the provision of public services in accordance with the terms and conditions set forth in the respective Agreement.

Municipal Energy Efficiency Plans (MEEP)

Under the Law on EE, Municipal Energy Offices are required to develop Municipal EE Plans and Implementation Progress Reports.

The overall objective of municipal EE plans is to reduce energy consumption in the building stock, transport and public lighting, and in the operation of municipal services by reducing the burden of energy costs on municipal budgets. Hence, the MEEP is expected to impact the municipality through:

- improvement of municipal services;
- reducing energy costs in the municipal budget;
- renovation of energy systems and buildings;
- improving the sanitary conditions and increased productivity; and
- raising awareness of the energy saving policy-makers, operators, and end-users.

Nevertheless, municipalities are currently not allowed to take loans as they do not meet the criteria stipulated in the Law on Loans. The central government, however, has allowed municipalities to obtain loans for implementing EE measures, in order to meet the KEEAP requirements.

Secondary Legislation

Series of secondary legislation adopted (e.g., appliance labeling, energy auditing, etc.).\(^\text{12}\)

\(^{12}\) The EPDB law is currently in the draft version, whereas the parliamentary comissions are still reviewing it before it is soon adopted. See the draft-law at: http://mmph-rks.org/sq/Projekt-aktet-normative-per-konsultime-publike/PROJEKTLIGJI-PER-PERFORMANCEN-E-ENERGJISE-NE-NDERTESAVE-1296.
These laws and subsequent legal acts are being implemented by a number of actors, which in many cases are supported by donors. However, all actions related to the Law on EE and the related secondary legislation are overseen and regulated by government authorities. These authorities and their respective roles are summarized below:

- **Kosovo Energy Efficiency Agency (KEEA) (under the Ministry of Economic Development):** responsible for the implementation of Kosovo’s plan on energy efficiency, as well as for reporting on the implementation of the agreed targets.

- **Energy Regulatory Office (ERO):** independent body reporting to the Kosovo Assembly; responsible for monitoring the energy market development; encouraging energy efficiency among market players; ensuring protection of customers including vulnerable customers.

- **Ministry of Economic Development (MED):** responsible for preparing the Kosovo energy strategy and policies for energy efficiency and renewable energy.

- **Ministry of Environment and Spatial Planning (MESP):** responsible for implementing the directive on energy performance in buildings.

- **Ministry of Local Government Administration (MLGA) and Association of Kosovo Municipalities:** responsible for improving energy data quality and for ensuring energy efficiency planning and implementation at local levels, as well as promoting renewable energy projects in their respective municipalities.

- **Ministry of Trade and Industry (MTI):** responsible for ensuring the implementation of the legislation on biofuels in accordance with the Energy Community requirements.

**Potential Changes in the Legislative Framework**

The existing laws and institutional mechanisms exemplify the efforts of Kosovar authorities towards implementing energy efficiency. The GOK has developed institutional and regulatory frameworks for EE and renewable energy. Additionally, GOK has worked to streamline and better regulate implementation effort by declaring secondary legislation and developing rulebooks, financing mechanisms, and other implementation elements, all of which were absent until recent years.

The current status of EE in Kosovo has been shaped primarily by the provisions of Kosovo’s current Law on Energy Efficiency. This Law, however, is presently under review and is expected to change substantially during the course of 2016. As a result, Kosovo’s EE situation and circumstances are expected to modify accordingly. The new law is expected to make way for the launch of an Energy Efficiency Fund, which will be initiated with a governmental grant, and then seek loans from international financial institutions (IFIs) and other sources. The legal precedence and justification for this fund derives from Article 52 of Directive 2012/27/EU, which 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.”

Additionally, Chapter 8, Article 16 of Kosovo’s Draft Law on Energy Performance of Buildings legally supports and foresees the presence of an EE fund by stating that “all funds collected from fines imposed based on this Law shall be transferred to the Fund on Energy Efficiency or, in the absence of such a Fund, to the Budget of the Republic of Kosovo.” Three pre-feasibility studies, aimed at analyzing respectively the legal, technical, and financial terms for starting the fund were recently conducted by the MED and KEEA.
However, these studies have not yet been published.

Despite the comprehensive legal framework, many challenges remain within the implementation and regulatory processes as well as for the implementing actors and governing entities. For example, in recent years KEEA has undertaken many tasks and activities related to its main task of implementing the Law on EE and preparing the 1st and 2nd NEEAPs; however, it has limited technical and almost no implementation capacities. This shortfall can be largely attributed to the inadequate budget/staffing the agency is coping with while adhering to its responsibilities. At the municipal level, EE improvements through MEEAPs are also encountering implementation difficulties due to insufficient access to financing. The public sector suffers from a range of procedural barriers, from budgeting to procurement, which tend to be rigid in nature and prevent many EE improvements from being realized.

The Energy Regulatory Office of Kosovo has increased energy prices, roughly 3.1 percent annually, from 2007 through 2015 for an approximate total increase of 27.9 percent. However, there have been few indications that such increases in energy costs have yielded positive impacts on EE levels. Kosovo has not developed a comprehensive communication strategy for promoting the benefits of EE throughout the country, nor has it established incentives in the promotion and compliance processes. There are, nevertheless, several positive incentive measures currently in the implementation phase. For example, loans with low interest rates have been introduced for individuals and companies that have EE projects.13

13 For example so-called “eko-loans” are being offered by several banks such as:
Procredit Bank, see at: https://www.procreditbank-kos.com/en-us/Eco;
ANNEX B – ADDITIONAL INFORMATION ON SELECTED FINANCING MECHANISMS

Budget Financing with Capital Recovery

Figure B.1 shows a typical structure of a public EE improvement project using budget financing. An illustrative example of this approach is a project financed by the World Bank in the former Yugoslav Republic of Macedonia (see Box B.1).

Figure B.1 - Structure of a Municipal EE Improvement Project Using Budget Financing

The World Bank provided a loan of US$25 million (later expanded to $75 million) to Macedonia to fund the Municipal Services Improvement Project (approved in 2009), which sought to improve the transparency, financial sustainability, and delivery of municipal services in the participating municipalities through a focus on revenue-generating public services and investment projects with cost-saving potential. The loan funds were managed by the MOF and were on-lent to participating eligible municipalities through sub-loan and grant agreements on the same terms as the World Bank loan. The loan repayments were in the form of reduced budget outlays to the municipalities for energy.

Eligible borrowers were creditworthy municipalities that had received MOF approval to borrow, with publicized budgets and audit reports. The loan program was supplemented by technical assistance funds for capacity building and institutional reform, and also by a performance-based investment grant fund that provided incentives and rewards to municipalities for implementing reform initiatives to improve service delivery performance.

Utility On-Bill Financing

A summary of this mechanism was provided in Section 5. Some of the advantages of this mechanism, based on experience in 20 U.S states, are (ACEEE 2011):

- It provides consumers access to financing using the utility’s relationship with its customers.
- It generally provides the customer the advantage of paying for the EE investment from the savings in the utility bills resulting from that investment.
- Such a program may be able to extend financing to otherwise underserved markets, such as consumers renting their facilities and residents of multi-family dwelling units.
- There is also the possibility of providing financing to consumers whose weak credit limits their ability to obtain conventional financing.
- The costs and risks related to the collection of loan repayments from consumers are reduced because very few consumers are delinquent on their utility bill payments.

**Key Characteristics**

- The financing structure is generally on favorable loan terms. The interest rate is based on the utility’s cost of capital and is therefore usually below the commercial market rate. Some utility financing programs charge a zero interest rate.
- The length of the loan is determined based on the type of EE equipment being financed and is designed in such a way that the consumer’s monthly loan repayment is less than the bill savings generated by the equipment. For example, Financing of CFLs may for a 9 to 18-month period which is commonly the payback period for such efficient lamps.
- The equipment is generally owned by the consumer and the utility has a lien on the equipment under the loan agreement.
- The utility’s financing and administrative costs can be rolled into the equipment price and paid by the consumer as a part of the loan repayment.
- The risk of default is low as most consumers usually are diligent about paying their utility bills. In some cases, the utility may threaten to cut of the electricity service for non-payment of the equipment loan, providing a major incentive to the consumer to not be in default.
- Some utilities have found it difficult and cumbersome to modify their billing systems to add loan repayments for EE equipment to the electricity bills.

**Illustrative Examples**

Recent examples of utility financing of EE projects through the billing mechanism include the Bangalore Efficient Lighting Program (BELP) launched by the Bangalore Electricity Supply Company (BESCOM) in India and the PROSOL program in Tunisia for installation of solar water heaters.

In the BELP program, the electric utility competitively selected manufacturers of energy-efficient Compact Fluorescent Lamps (CFL) based on price, quality and warranties offered. Residential customers of BESCOM were able to obtain the CFLs from the manufacturers’ retail outlets. The customer signed an agreement with BESCOM to pay for the CFLs over a
9-month period through their electric bills (IIEC 2006).

The Tunisian program (called Programme Solaire or PROSOL) was a joint effort involving the Tunisian Ministry of Industry, Energy, and Small and Medium Enterprises, and the National Agency for Energy Conservation (ANME). The solar water heating manufacturers and suppliers worked with commercial banks to arrange financing for customers interested in purchasing solar water heating systems. The customers agreed to repay the loan through their electricity bill. The electric utility collected the customer payments and repaid the banks. A summary is provided in Box B.2.

**Box B.2 – Tunisia PROSOL Program**

The PROSOL project was initiated in 2005 by the Tunisian Ministry for Industry, Energy and Small and Medium Enterprises and the National Agency for Energy Conservation (ANME), with the support of the UNEP-MEDREP Finance Initiative. The objective of PROSOL was to revitalize the declining Tunisian solar water heater market. The innovative component of PROSOL was in its ability to actively involve the finance sector, and turn it into a key player for the promotion of clean energy and sustainable development. By identifying new lending opportunities, banks were able to build dedicated loan portfolios, thus helping to shift from a cash-based to a credit-based market.

The main features of the PROSOL financing scheme were:

- Loan mechanism for domestic customers to purchase solar water heaters
- Cost subsidy provided by the Tunisian government, up to 100 dinars (57 Euros) per m²
- Discounted interest rates on the loans, progressively phased out.
- A series of accompanying measures including an awareness raising campaign, a capacity building program and carbon finance.
- Key partners included:
  - Société Tunisienne de Banque (STB)
  - Two commercial banks (UBCI and Amen bank)
  - The State electricity utility STEG (Société Tunisienne d’Electricité et du Gaz)
  - Manufacturers, importers and installers of solar water heaters
  - Local consultants

Launched in April 2005, the PROSOL project achieved immediate success. In less than one year (April-December 2005), sales reached the record figure of 7,400 solar water heating systems, for a total surface installed of 23,000 m². By the end of 2006, an additional 11,000 units were sold, corresponding to approximately 34,000 m².

The main advantages of utility on-bill financing are:

- Allows the customer to purchase EE equipment and pay for it from savings generated by the equipment
- Facilitates the customer’s repayment of the equipment purchase by collecting the payments through the electricity bill.
- Reduces the transaction cost of recovering the loan repayments from customers.
- Reduces the risk of default.
- Improves the relationship between the utility and the customer.

There are also some limitations and challenges related to the utility consumer financing approach:

- Many utilities are unwilling to enter into such arrangements to finance equipment purchase through the electricity bill
- The utility billing system may not be structured to handle the collection of loan repayments and the cost of modifying the system may be high.
The regulatory system may not allow the utility to collect payments for equipment loans.

While default risks are low in such programs, there are issues with respect to what actions the utility can take in case the customer does not pay the finance charge or only pays a part of the utility bill. While some utilities have included provisions to cut off service for non-payment of the EE finance component, consumer advocates have questioned the legal basis to do so.

Some of the other challenges include accurately estimating the utility financing and administration costs, assuring that the monthly payment is less than the bill savings, addressing the payments when the ownership of the property changes, addressing energy savings that are non-electric, etc.

**Energy Efficiency Revolving Fund (EERF)**

EERFs have been successfully deployed in Bulgaria, Romania and (more recently) in Armenia. The typical structure of an EERF was presented in Section 5. Box B.2 provides an illustration of the Armenian R2E2 fund.

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**Box B.3 - Armenia Renewable Resources and Energy Efficiency Fund (R2E2 Fund)**

The Fund was established in 2005 and capitalized with an US$8 million IDA credit and US$0.7 million GEF grant. The Fund is overseen by a Board of Directors, which includes government, private sector and academia and operates on a fully commercial basis.

The Fund currently implements a World Bank/GEF project that provides EE services in public sector facilities—such as municipal street lighting, schools, hospitals, and administration buildings (average size about US$100,000). It has already financed projects worth US$8.6 million between 2012 and 2015 and provide technical assistance for project preparation and capacity building.

The Fund provides loans to municipalities and public entities with revenue streams independent of the state budget, and energy service agreements (ESAs) to schools and other public facilities, which are not legally independent:

- Loans will be provided under an ESA, whereby the Fund will also provide additional services against a service fee (conduct a preliminary screening; carry out the procurement of design and works; oversee construction and commissioning; pay the contractors for services provided; and monitor the sub-projects). The loans will be treated as municipal debt, with fixed repayment obligations to be made within their budget provisions in future years. The amount of the repayments will be designed to allow fund clients to repay the investment costs and service fee from the accrued energy cost savings.

- Energy Service Agreements: The Fund will first determine the average baseline energy use, identify the general scope of a sub-project, develop bidding documents, conduct the procurement, finance the project, oversee construction and commissioning, and monitor the sub-project. The ESA will obligate the facility to pay the baseline energy costs (with adjustments for energy prices, usage, etc.) over the life of the agreement. In such cases, there is no loan or debt incurred by the client entity. With these payments, the Fund will pay the energy bills on the facility’s behalf and retain the balance to cover its investment cost and service fee of up to 10 years. The agreement will also be designed so that the duration can be adjusted if the Fund recovers its full investment earlier or later.

To support the build-up of an ESCO industry in Armenia, the Fund uses simplified ESCO contracts to shift some performance risks to private construction firms/contractors.


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**Financing Windows or Products**

An EERF would need to be designed to serve the needs of all municipalities and central government agencies. Some of these agencies may not be creditworthy, or have no
borrowing history; others may not have available borrowing capacity; and others may not have the internal capacity to identify, design, and manage the implementation of EE projects. To address some of these issues, an EERF may offer several financing products and “windows,” as shown in Figure B.2 and listed below:

**Figure B.2 – Financing Windows of an Energy Efficiency Revolving Fund**

The Debt Financing Window and ESAs were discussed in detail in Section 5. The other windows are summarized below.

**Risk Guarantee Window**

An EERF may offer a risk-sharing mechanism by providing credit or risk guarantees to commercial banks and other financial institutions (FIs) in order to leverage commercial financing for public sector EE projects. Risk-sharing programs are designed primarily to address the common perception of lenders that EE projects are inherently riskier than traditional investments (a major financing barrier), or to allow them to lend to marginally creditworthy clients with very attractive EE investment opportunities. They provide commercial banks/FIs with a partial coverage of the risk involved in extending loans for EE projects. The risk-sharing facility generally includes a subordinated recovery guarantee\(^{14}\) and may also have a “first-loss reserve”\(^{15}\) that may be used to absorb up to a specified amount of losses before the risk-sharing occurs.

For example, the Bulgaria EE Fund provides three types of guarantees: (i) a credit guarantee covering up to 80 percent of the credit value to secure loans for EE projects, with individual guarantee commitments not to exceed Lev 800,000 (about $500,000); (ii) an uncollateralized guarantee to a portfolio of receivables of energy service companies (ESCOs) for their energy

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\(^{14}\) In a subordinated recovery guarantee, the guarantor ranks behind other lenders in the recovery of the guarantee funds it pays out in case the borrower defaults on the loan. This allows lenders to offer better loan terms, such as lower interest rates or longer tenors. A subordination provision may be useful, for example, when interest rates are high due to higher perceived risk, or if a new technology with limited operational experience is being deployed.

\(^{15}\) In the event of a loan default, a first-loss reserve pays for all losses incurred until the maximum first-loss reserve amount is exhausted. The lender incurs losses only if the total loan loss exceeds the first-loss amount. By covering all or a large share of first losses and sizing the definition of first losses to be a reasonable proportion of the loan portfolio (usually higher than the estimated default or loss rate), a first-loss reserve can provide meaningful risk coverage to the lender, but with a low level of total guarantee liability relative to the total size of the portfolio.
performance contracts (EPCs), covering the first 5 percent of the delayed payments of the portfolio covered; and (iii) a residential portfolio guarantee covering the first 5 percent of defaults within the portfolio of projects.\textsuperscript{16}

**Budget Capture**

The budget capture option may be used by an EERF when the public agency receives dedicated funds from the MOF or another government agency to pay its energy bills. In such cases, after the EERF invests in EE projects implemented by the public agency, the government (i) reduces its budgetary outlays to that public agency by an amount equivalent to the amount of energy cost savings (thereby “capturing” the savings) and (ii) redirects these funds to the EERF. This would require that the government agrees to provide the same amount to the public agency for energy bill payments in subsequent years.

**Grants Window**

If an independent, sustainable financing source is available, EERF may also offer a grant window. For example, if a government (through special taxes, levies, or surcharges, for example) or a donor agency commits to funding EERF for a given number of years, a portion of the funding may be used for grants to public agencies to improve the economic attractiveness of the EE project from the public agency perspective.

However, if the EERF is established to operate on a fully commercial basis, it is unlikely that it will provide grant financing—except when such grant financing is available from another source and can be combined with the loan financing provided by the revolving fund. If such funds are made available, it should be made clear that these are limited; failing to do so may create false expectations for more grants, which may undermine the fund’s long-term sustainability.

**Forfaiting**

A possible service that an EERF can provide or arrange is forfaiting, the sale of receivables form an EE project. Forfaiting is useful in situations where an energy service provider (ESP) is providing its own equity for project financing. It is a form of transfer of future receivables from one party (the seller – an ESP) to another (the buyer – a financial institution).\textsuperscript{17} An example of forfaiting is the Bulgarian ESCO Fund (BEF) established under the Law for Special Investment Companies by the Bulgarian company Enemona. This fund received a loan of €7 million from the European Bank for Reconstruction and Development (EBRD) to buy receivables under the energy saving contracts signed by Enemona. The fund allows Enemona to use its capital for further development of projects in both the industrial and public sectors including kindergartens, schools, hospitals, and other municipal buildings.

**Dedicated EE Credit Lines**

Dedicated EE credit lines for public sector projects address many of the issues related to insufficient lending by banks and financial institutions. By establishing a credit line and providing funding, governments or donor agencies can help overcome some of the barriers to commercial financing. Most EE credit lines also have a TA component to build lender

\textsuperscript{16} The residential portfolio guarantee was not used. The available funds were committed to the ESCO portfolio guarantees.

\textsuperscript{17} The original creditor (the ESP) cedes his claims to future revenues from the project and the new creditor (the FI) gains the right to claim these future receivables from the debtor (the client). The ESP receives a discounted one-time payment from the FI that then allows it to invest in new energy savings performance contract (ESPC) projects.
capacity relative to EE project financing. However, issues related to creditworthiness and adequate collateral limit their use in municipalities.

The typical structure of an EE credit line is shown in Figure B.3. Box B.4 provides an illustration of a municipal EE credit line in Serbia.

**Figure B.3 - Illustrative Structure of EE Credit Line**

![Illustrative Structure of EE Credit Line](image)

*Source: Limaye 2013a*

**Box B.4 - Example of Municipal Credit Line in Serbia**

The German development bank, KfW, has launched a dedicated credit line for municipal environmental infrastructure and EE investments in Serbia. A total of €100 million will be made available and disbursed to eligible municipalities and public sector utility companies via Serbian on-lending banks, following the standard procedures for municipal borrowing. This is a continuation of the current KfW project on "Municipal Infrastructure via the Financial Sector". To provide more incentives for Serbian municipalities to invest in EE and environmental projects, KfW and the EC signed an agreement at the end of 2011. A grant scheme will be implemented to award grants of 15 to 20 percent of the loan amount financed from the KfW credit line after their successful completion.

*Source: [http://www.meglip.org/wp/?page_id=4](http://www.meglip.org/wp/?page_id=4).*

**Risk-Sharing Facility**

A typical structure of a risk-sharing facility is shown in Figure B.4. Box B.5 provides the example of the IFC/GEF risk-sharing program for Commercializing Energy Efficiency Finance in Central and Eastern Europe (CEEF).
Super ESCO

A Super ESCO can be uniquely positioned to overcome a number of the barriers faced by smaller ESCO companies. With its size and credibility as a public institution, a Super ESCO has the capacity both to support the growth of a nation’s private domestic ESCO business and to finance EE projects, since it typically subcontracts all project implementation to local ESCOs. Figure B.5 illustrates the structure of a Super ESCO.
Examples of super ESCOs include the New York Power Authority (NYPA) in the United States, Fedesco in Belgium, Fakai Super ESCO in China, and Energy Efficiency Services Limited (EESL) in India (see Box B.6).

Box B.6 - Energy Efficiency Services Limited: India’s Super ESCO

The government of India established Energy Efficiency Services Limited (EESL) as a super ESCO to carry out public sector undertakings under the Ministry of Power. EESL functions as the implementation arm of the National Mission for Enhanced Energy Efficiency (NMEE). The purpose of setting up a separate corporate entity was to develop an EE market that was virtually nonexistent in the country. It has the mandate to implement EE projects in the public sector and facilitate and promote the development and growth of the private ESCO industry through partnerships and subcontract arrangements. The initial capital of EESL is about US$50 million.

Some of the major functions of EESL are EE planning and implementation in the residential sector, commercial buildings, industrial sites, municipal street lighting and water pumping, and agricultural pumping. EESL also does capacity building of utilities and state designated agencies (SDAs) responsible for EE implementation under India’s Energy Conservation Act.

EESL has successfully collaborated with state and local government agencies to implement a wide range of projects including LED lighting in homes, efficient agricultural pumps, efficient street lighting, and efficient chillers in commercial buildings. EESL has engaged in a number of partnerships with private sector organizations to implement these projects.

Source: EESL 2015

Limited (EESL) in India (see Box B.6).

Commercial Financing with ESCOs

The business models typically utilized by ESPs are illustrated in Figure B.6.

Before an energy service market for the public sector can be developed, the government must first undertake a set of legislative, regulatory, and policy initiatives targeted at:

- Creating a large and stable demand for energy services projects in the public sector;
• Removing barriers to public procurement of EE services and establishing clear regulations, rules and procedures for public agencies to work with private ESCOs; and
• Facilitating adequate and affordable financing of private ESCO projects.

Table B.1 provides more detail on these initiatives.

**Figure B.6 - Summary of Business Models for Energy Service Companies (ESCOs)**

<table>
<thead>
<tr>
<th>Outsourced Energy Management Business Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Energy supply contracting: ESP takes over equipment operation and maintenance (O&amp;M) and sells output at fixed unit price (&quot;chauffage,&quot; &quot;outsourcing,&quot; &quot;outsourced energy management&quot;)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Performance Contracting Business Model</th>
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<tbody>
<tr>
<td>• Public or Super ESCO</td>
</tr>
<tr>
<td>• ESPs with third party financing design, finance, implement, verify, and get paid a share of actual energy saved (ESCO “Shared Savings”)</td>
</tr>
<tr>
<td>• ESPs with design/implement project, and guarantee minimum level of savings (ESCO “Guaranteed Savings”)</td>
</tr>
<tr>
<td>• ESPs with variable term contract act as full service ESCO, but contract term varies</td>
</tr>
<tr>
<td>• ESPs with 1-year contract design/implement project, receive 60–70% of payment</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Financial Services Business Model</th>
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<tbody>
<tr>
<td>• Supplier credit, an equipment vendor designs, implements, and commissions project</td>
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<td>• Equipment leasing, similar to supplier credit except payments are generally fixed</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Engineering Services Business Model</th>
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</thead>
<tbody>
<tr>
<td>• Engineering services with performance-based payments</td>
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<tr>
<td>• Engineering services with fixed payments</td>
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</tbody>
</table>

Source: World Bank 2014c

**Table B.1 - Government Actions to Foster Private ESCOs**

<table>
<thead>
<tr>
<th>Create Demand for EE Services</th>
<th>Remove Barriers to Public Procurement of EE Services</th>
<th>Facilitate Financing of ESP Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Increase PA knowledge and awareness of ESPs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Increase PA capacity to identify ESP opportunities</td>
<td></td>
<td></td>
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<tr>
<td>• Require EE targets and action plans</td>
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<tr>
<td>• Develop standard, templates, benchmarks, and M&amp;V schemes</td>
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<tr>
<td>• Organize workshops with PAs and ESPs</td>
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<tr>
<td>• Aggregate similar projects across PAs</td>
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<td></td>
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<tr>
<td>• Accredit or certify ESCOs</td>
<td>• Allow PAs to sign multiple-year contracts</td>
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<tr>
<td></td>
<td>• Allow retention of energy cost savings to pay ESPCs</td>
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<tr>
<td></td>
<td>• Change procurement rules to select most value, not least cost</td>
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</tr>
<tr>
<td></td>
<td>• Exclude ESP payments from PA debt</td>
<td></td>
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<tr>
<td></td>
<td>• Require consumption-based billing for district heating</td>
<td></td>
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<tr>
<td></td>
<td>• Allow PAs to engage in PPPs and EE equipment leasing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Encourage PAs to use simple ESCO business models</td>
<td>• Establish EE revolving fund with loan facility</td>
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<tr>
<td></td>
<td></td>
<td>• Establish EE revolving fund with ESAs</td>
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<tr>
<td></td>
<td></td>
<td>• Provide budgetary grants</td>
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<tr>
<td></td>
<td></td>
<td>• Provide risk-sharing facility</td>
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<tr>
<td></td>
<td></td>
<td>• Facilitate forfaiting of ESPCs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Establish public or super ESCO</td>
</tr>
</tbody>
</table>

Note: ESA = energy service agreements; ESPC = energy savings performance contract; M&V = measurement and verification; PA = public agency; PPP = public-private partnership.

Source: World Bank 2014b
While the concept of the Super ESCO is still in its infancy, several countries have already adopted the idea of a Super ESCO and have created a Super ESCO to help encourage their domestic energy services market. Other nations are now considering the establishment of Super ESCOs. Some examples are provided below.

**Belgium - FEDESCO**

In 2005, the Belgian federal government created FEDESCO, a public but independent energy services company to encourage the development of a domestic energy services industry (FEDESCO 2010). The primary mission of FEDESCO is to study, facilitate and coordinate energy savings projects in public buildings through the use of third party financing (JRC, 2010). Phase 1 of FEDESCO’s objectives focuses on 1800 buildings occupied by ministries, federal public services (administrations) and other governmental organizations with a floor area of over 8 million m² and an annual energy bill of over €100 million. These buildings are owned and managed by the Federal Building Agency. In subsequent phases, other public buildings (from regional governments, provinces, municipalities, public companies, etc.) and even private buildings will be included.

FEDESCO provides both professional energy services and innovative financial services (pre-financing, third party financing, and energy savings performance contracting) to private ESCO companies in Belgium. This Super ESCO also seeks to facilitate an annual investment program of up to €7.5 million to encourage private sector investment in energy efficiency. FEDESCO was created in the framework of the 2nd Belgian Federal plan for sustainable development (2004-2008) and the National Climate Plan (2002-2010). FEDESCO has been successful in achieving a 10 percent reduction in both total energy consumption and GHG emissions in federal public buildings in Belgium.

**Croatia - HEP ESCO**

In 2003, the World Bank and the Global Environment Facility (GEF) helped create an ESCO subsidiary within the national power utility, Hrvatska Elektroprivreda (HEP). This national HEP ESCO was capitalized by a World Bank loan (World Bank, 2003), HEP equity, local banks, and other sources, to offer EE services to public and private clients. GEF funds were also mobilized to provide additional credit enhancement for HEP ESCO projects and provide some technical assistance to the ESCO and local banks. Since the Croatian market was small and no private ESCOs were operating in the market, the government did not foresee inherent risks related to crowding out the private sector. The HEP ESCO used the “open book” model to keep its pricing fair and transparent. Government entities can directly contract with government companies and their subsidiaries, so public agencies are not required to conduct any competitive procurement to contract with HEP ESCO.

The HEP ESCO received a US$7 million GEF grant and a US$5 million World Bank loan, and equity investment from the parent utility. The ESCO also negotiated financing arrangements with local commercial bank debt facilities. By the end of 2008, about 186 million Kuna (US$35.4 million) in energy savings contracts have been signed. HEP ESCO has received a credit line from KfW to increase its financing capacity.

**Province of Hebei, China - The Fakai Scientific Services Corporation**

Recognizing that implementation of EE projects needed to be substantially increased in
Hebei to meet the goals established by the Chinese national government, the Hebei DSM Center established the Fakai Scientific Electricity Services Limited Corporation as a wholly-owned subsidiary to encourage, promote and implement EE and DSM projects (Hebei DRC, 2009). This company has been established as a Super ESCO. It is developing and implementing energy efficiency projects using the ESPC model, as well as assisting other ESCOs operations in Hebei to grow their businesses and undertake more ESPC projects (USAID, 2010).

Fakai was capitalized by the Hebei Development and Reform Commission (DRC) and will strive to work with local, national and international financial institutions as well as donor agencies (such as the Asian Development bank) to mobilize resources in an effort to achieve the EPP goal of 600 MW. Fakai is also exploring the establishment of a PPP to scale-up its Super ESCO activities.

**India - Energy Efficiency Services Limited**

The Bureau of Energy Efficiency (BEE), created by the Energy Conservation Act, 2001, has undertaken a number of initiatives to encourage and promote ESCOs and to create a market for ESCO services. BEE working with other agencies of the Government of India, established a national organization called Energy Efficiency Services Limited (EESL). EESL was capitalized by four existing national public sector undertakings (PSUs) namely National Thermal Power Corporation, Power Grid Corporation, Power Finance Corporation, and Rural Electrification Corporation (Business Standard, 2009). The initial capital of EESL was about US$50 million.

The company functions as the implementation arm of the National Mission for Enhanced Energy Efficiency (NMEEE). The purpose of setting up a separate corporate entity was to develop an EE market that was virtually nonexistent in India. Some of the major functions of EESL include EE planning and implementation in buildings and industrial sites, implementing the “Bachat Lamp Yojana” (a scheme for promotion of CFL lamps nationally using the Program of Activities concept for CDM), and demand-side management in the municipal and agricultural sectors. EESL is also assisting the growth and development of the existing ESCOs by engaging them in project implementation.
ANNEX D – KOSOVO EE ROUNDTABLE SUMMARY

Republic of Kosovo
Energy Efficiency & Renewable Energy Project
Options for Financing Energy Efficiency in Public Buildings in Kosovo

Summary of Roundtable on April 4, 2016, 9-10:30am

In the context of the Kosovo Energy Efficiency & Renewable Energy Project (KEERP), the World Bank (WB) prepared a draft report on Options for Financing Energy Efficiency in Public Buildings in Kosovo. A roundtable meeting was co-hosted by the WB and the Ministry of Economic Development (MED) on April 4, 2016 at the MED’s premises to present and discuss the findings of the report. Participants included 22 representatives from the Ministry of Finance (MOF), MED and its Kosovo Energy Efficiency Agency (KEEA), European Union (EU) Delegation in Kosovo, European Bank for Reconstruction and Development (EBRD), Deutsche Gesellschaft für Internationale Zusammenarbeit (GiZ), KfW Development Bank, and Konrad-Adenauer-Stiftung (KAS). Please refer to Annex I for the participant list.

The WB team presented the report, including the potential for energy efficiency (EE) improvements and related investments needed for public buildings, opportunities for and barriers to financing public building EE retrofits in Kosovo, identification and assessment of alternate financing options based on experience in the region and elsewhere, and recommendation to establish an independent Kosovo Energy Efficiency Revolving Fund (KEERF) for public buildings. It would be a sustainable institutional solution to contribute towards Kosovo meeting its national EE targets.

The subsequent discussion identified a number of questions and issues that need to be considered in the detailed design of the KEERF. While there was general consensus that a revolving fund is a viable option to finance EE in public buildings, some key issues were raised and responded to by the WB:

- There is agreement that public buildings should be the focus of the KEERF in the initial phase of the Fund. However, several participants highlighted that there is a need to also cover the residential and private sectors – perhaps in subsequent phases.
- There was a suggestion to combine the KEERF with an ECO fund. It was suggested that more in-depth analysis regarding the investment requirements to meet Kosovo’s national EE targets would be appreciated. The WB’s view is, however, that the current targets of the National Energy Efficiency Action Plan (NEEAP) are for 2018, and the KEERF may not be fully operational until 2017. Therefore, the KEERF would not significantly contribute to the NEEAP targets. The KEEA agreed that the focus of the KEERF should be on achieving savings by 2025 rather than 2018.
- The Minister of Economic Development noted that the WB report is generally consistent with MED’s own studies on legislative, financial and institutional models to support the establishment and operation of an EE fund. While MED’s concept combines a revolving EE fund for the public sector with guarantees for the residential sector and SMEs, the Minister agreed that the initial focus of the Fund
should be on the public sector as recommended by WB, and that other financing windows and other sectors could be added later.

- One of the key requirements is the appropriate legal framework for the establishment and operation of the Fund. According to the Minister, the legal framework could be ready by next year. The WB emphasized that we need to rely on legal teams to ensure consistency with Kosovo law. It is important to note that the suggested the KEERF would not require any recurring operating costs from the Government, nor any requirement to separate out a portion of the central budget (which is against the law today).

- It was suggested that energy generation can also contribute to EE. However, the WB pointed out that efficiency improvement in distribution systems and district heating require large investments which may be better provided through direct financing mechanisms rather than a fund.

- It was pointed out that there are already six funds that have some provisions for public sector infrastructure financing in Kosovo; it may therefore be appropriate to consider using one of these existing structures instead of creating a new one.

- Regarding the mentioned existing funds, the WB team pointed out that they are not aware of existing structures that are able to serve the needs of all municipalities or the central government. WB also pointed out that, while the Western Balkans Investment Framework (WBIF) has identified many sources of financing and technical assistance for EE, a very large share of available funds from existing financing sources in the region has not been deployed. Additionally, there are large investment needs for building EE in non-creditworthy municipalities, municipalities which have hit their debt limits, and central government agencies, which traditional financiers are generally unwilling to serve.

- In response to the question about the WB’s readiness to finance an EE fund, the WB team informed the roundtable that it would be prepared to deploy €5 million from the current KEERP into the KEERF.

- There was a comment that grant financing may possibly be available for some EE projects and that this should be considered in the fund design. The WB responded that, to the extent grant financing was available, the KEERF can certainly utilize such grants to improve the economics of EE projects, but that the basic business model of KEERF should not rely on grant financing because such financing may not be sustainable.

- The Deputy Minister (MED) appreciated the approach, assessments and recommendation of the WB report and noted the need to discuss the KEERF with the MOF. She mentioned that, while a revolving fund seems to be the best option for public buildings, we may need additional windows to promote EE in the residential and private sector.

- Given participants’ comments that the KEERF should also cover the residential and private sectors, the WB highlighted its recommendation to start with the public sector first, so that demonstrable results can be achieved quickly. Moreover, the WB pointed out that starting with the public sector can have positive effects on the market (e.g. reduced prices for EE products and equipment, such as insulation or lighting, as the market grows; standardization of contracts, agreements and implementation procedures; and development of an energy services industry). Once the KEERF is demonstrated to be successful and sustainable, additional financing windows covering other sectors can be added. This would also allow the KEERF to start with a modest capitalization in the range of about €10 million. Based on
discussions with the MOF, this seems to be a more realistic option than starting with a larger fund with multiple financing windows.