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Project “Removing Barriers to Increase Investment in Energy Efficiency in Public Buildings in Ukraine through the ESCO Modality in Small and Medium Sized Cities”, financed by the Global Environment Facility and implemented by the United Nations Development Programme

Recommendations on Financial Incentives Schemes to Support ESCO Market Mechanism, Including Analysis of all Options Aimed at Supporting ESCO Market Development

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Glossary

CAPEX	Capital expenditure
EBRD	European Bank for Reconstruction and Development
EE	Energy efficiency
EES	Energy efficiency services
ESCO	Energy service company
FI	Financial institution
IFIs	International finance institutions
M&V	Measurement and verification
SAEE	State Agency for Energy Efficiency
SDGs	Sustainable development goals
SME	Small and Midsize Enterprise
EU	The European Union
IBRD	The International Bank for Reconstruction and Development
GEF	The Global Environment Facility
EIB	The European Investment Bank
PPP	Public–private partnership
RE	Renewable energy



1. Key Recommendations for Designing Super ESCO

Although the concept of Super ESCOs has been around since the 1990s, there are a limited number of active and successful Super ESCO experiences, and associated models, throughout the world.

However, these experiences have in common a concept where the government creates an entity that acts as a public ESCO to conduct EE programs in public sector facilities (and in some cases, the residential sector) through the mobilization and support of private ESCOs.

Super ESCO is defined as an entity that is established by the Government and functions as an ESCO for the public-sector market (hospitals, schools, municipalities, government buildings, and other public facilities), and also supports capacity development and project development activities of existing private sector ESCOs including helping create new ESCOs.

Usually the Government 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.

Super ESCOs are intended to address two main issues:

- Accelerating EE programmes, primarily in the public sector;

- Inducing the development of a network of private ESCOs, many of them SMEs, or reinvigorating an existing one, by facilitating access to EE projects and their financing.

They are set up in a configuration that, eventually, allows them to lift most of the barriers that ESCOs are facing when dealing with EE improvement projects such as public facilities (schools, hospitals, offices), street lighting, municipal water and sewage pumping systems, where energy services markets have traditionally faced multiple barriers. Super ESCOs are setup to allow the following:

- Easy access to public sector facilities;
- Proper access to tailored and affordable project financing;
- A sizeable reduction of transaction costs for small projects through bundling a number of them;
- Standardization of EPC and M&V templates, improving the contractual frameworks and reliability of the EE projects implementation process;
- De-risking and risk sharing through an intermediary role, thereby making ESCOs and end-users consumers more comfortable working with each other.

Due to the size and quality of human and financial resources that Super ESCOs can potentially mobilize in a reasonable amount of time, these entities are in a

position to work across the entire value-chains required to implement EE projects at scale.

Super ESCOs can design large national-level EE programs, accredit private ESCOs to implement them and guarantee the results of these programmes, thereby reducing the risks perceived by end users and financiers when dealing with ESCOs. Having government support enables the Super ESCOs to recruit and train, and find highly qualified human resources to run/manage the technical and financial systems that make the bulk of the Super ESCOs' set up and ensure that programmes are successfully implemented in collaboration with ESCOs and consumers.

Some of these resources can easily be dedicated or directed to build the capacities of Private ESCOs and to help execute the programmes.

The actions by Super ESCOs in the EE ecosystem, particularly in the case of public sector EE projects, contribute to addressing effectively the technical barriers and help pave the road for scaling up the ESCO market in the future. Indeed, in an ESCO market that did not take off yet, which is composed of a collection of small ESCOs operating in an ambiguous EE business environment, as it is mainly the case in the Arab region, it is very difficult to mobilize the adequate human and capital resources the way a Super ESCO can.

The government sets up the publicly-owned Super ESCO entity and provides the initial funding. International donors and development institutions may provide additional funding and technical assistance to the Super ESCO to support the scaling up of the implementation of the national EE programmes, mainly targeting, initially, the public sector.

The Super ESCO designs and develops the EE programmes, bundles them if required and procures ESCO services through subcontracts with prequalified private ESCOs to implement the projects included in these programmes.

The Super ESCO covers the total financing requirements of these EE projects and recuperates the monetized savings associated with the energy savings resulting from the EE projects for a certain period, to pay for the EE projects' investments.

In this set up, the Super ESCO defines the necessary works' packages and/or programme components to be completed. The super ESCO then subcontracts these components or packages to smaller private ESCOs or specialized contractors, based on a competitive process to complete the needed work.

It signs an EPC Contract with a public facility owner, usually without competition, to complete one or several EE programme(s) or project(s).

The key elements of guaranteed performance in these EPCs between the Super ESCO and the public facility owner are reflected in the sub-contracts between the Super ESCO and the ESCOs, which also rely on a set of standardized EPCs.

Other potential models of Super ESCOs may be developed as a private, an NGO or as a public–private partnership (PPP) entity. These types of set ups, particularly the PPP, may be more suitable for targeting scaling up EE programmes in the private sector.

Super ESCOs can have very positive impacts on the improvement of energy efficiency in both public and private sectors. In countries where ESCO markets are inexistent or not very active, Super ESCOs can help to rapidly produce a significant transformation of the scale of these markets. Their set up and mandate allow them to overcome most of the barriers facing the private sector ESCOs and the demand-side management (DSM) energy services market in general.

In particular, Super ESCOs can have the following impacts:

- Super ESCOs can conduct “marketing campaigns” to raise the awareness and interest of public and agencies and private institutions in EE services and projects.
- Super ESCOs offer tailored financing mechanisms, allowing public agencies and private institutions to avoid budgeting issues related to their assigned Capital Expenditure vs. Operating Expenditure for the public sector, and competing with budgets set for running their core business in the case of the private sector. This allows both the public agencies and private institutions an easy access to financing.
- Super ESCOs offer standard contracting arrangements, customized for public agencies, that can overcome problems associated with existing procurement regulations that are not suitable for Energy Performance Contracting, and remedy the limited capacity of public agencies in that respect.
- Super ESCOs would prepare the EE projects' developments using its highly qualified resources, overcoming the weaknesses that most private ESCOs have in that respect because of their limited resources for project development.

This would increase the credibility of the EE services market.

- Super ESCOs would provide technical assistance to local financial institutions on EE projects and help them develop new financial mechanisms and products to overcome the lack of familiarity of local financial institutions with financing EE services' projects. They can also develop with the financial institutions risk management products to mitigate negative perceptions that these institutions have about financing EE services projects.
- Super ESCOs would develop standardized and formal measurement and verification procedures and protocols to assess the energy and financial benefits of the EE services projects.

A publicly owned Super ESCO would probably be the likely solution when the intention is only to address scaling up EE implementation in the public sector, however a PPP-Super ESCO, addressing both the public and private sectors, would be highly recommended for net energy importing countries that cannot rapidly implement drastic energy end-users price reforms.

Public facilities can be ordered to proceed with the implementation of EE programmes and demand-side RE solutions through the Super ESCO scheme. Furthermore, private economic operators, particularly in the non-residential sectors, would also be required to proceed with the implementation of EE programmes and demand-side RE solutions, through the Super ESCO scheme as well, if they wanted to keep paying subsidized energy prices.

In most of the limited Super ESCO experiences, public utilities played the major role in the creation and capitalization of these special EE services companies, as was the case with EESL in India and Etihad in the UAE. However, it is highly recommended that other stakeholders be involved to similar extent, so that EE projects are considered in all their encompassing dimensions and with respect to all energy sources' end uses, and not just electrical end uses, which seem to be the focus when utilities' influence is not balanced by the weight of other stakeholders.

Finally, it could be argued that the role of Super ESCOs can be played by national EE and / or RE agencies, as they have been doing in some countries in the region, through setting up Project Management Units for

some pilot projects or DSM energy services business initiations. However, the mandate of these institutions should focus on developing DSM policies, evaluating technologies, conducting pilot programs, setting up national targets and goals, and planning for their future achievements, etc. The nature of this mandate, in addition to requiring a full dedication of these agencies to its associated tasks, involves an organizational setup that is not suitable for the business models needed for the implementation of EE programmes or demand-side RE solutions, at scale and going way beyond the stage of pilot projects. This endeavour entails very different business models, with adequate human and financial resources, that allow a dedicated focus on getting large scale uptake of EE programmes and demand-side RE solutions in a commercial set up that can deal with the technical, financial and organisational requirements, in an environment where conventional energy services businesses are not viable. And that's exactly what Super-ESCOs are set up to offer.

Once established and operating in each country in the region, the concept of Super ESCO could eventually be extended to sub-regional levels, where several countries in the region would consider a model that can allow them to better address common EE and demand-side RE issues across their countries and reach higher levels of financing capabilities. But this would require many preparatory steps, including a functioning framework for transparent and working economic exchanges.

Finally, many countries are engaged in implementing the 2030 Agenda for Sustainable Development and fulfilling global climate commitments. They each need to institute economic means of implementing the energy related sustainable development goals (SDGs) to deliver the social, economic, and environmental gains of SDGs for their own citizens, as well as reduce their carbon footprints and associated climate impacts. Super ESCOs seem to be one of the most suitable interventions that, if implemented properly, can effectively overcome the combined constraints, on energy efficiency and demand-side renewable energy, of the region's weak institutional capacity, fragile sustainable energy policies and lack of energy cost-reflective price signals. These prevailing conditions in the region make Super ESCOs the most capable tool for Arab countries to deliver on SDG7 and other energy related SDGs.



2. Best Practices of Refinancing Energy Efficiency Investments

2.1. A Concept of Refinancing Energy Efficiency Investments

There exists a general consensus among experts that large potentials of cost-efficient energy efficiency investment are currently untapped due to a bundle of barriers, such as lack of trust in savings forecast, high cost for project preparation and procurement, split incentives, lacking awareness for non-core activities such as energy efficiency, perceived low energy prices, etc. Within this set of interlinked barriers, the access to attractive financing represents a serious restriction for the expansion of energy efficiency investments.

Energy efficiency service providers address the clients' reluctance to commit financial resources by including financing into their service packages. In this case the EES provider (ESCO) prefinances the investment and gets repaid through yearly remunerations which are dependent on the actual savings achieved. This means not only that the EES provider has the investments in his balance sheets but also leads to a situation where the EES provider sooner or later reaches his own credit limits and has to reject further EES projects.

Therefore, if remarkable market growth is intended, one major question is how the balance sheets of EES providers could be cleaned up in order to gain financial leeway to expand the EE business.

Refinancing schemes could overcome the above-described financing barriers in the EES business. In general, a refinancing scheme can be defined as an approach whereby an EES provider sells and a refinancing institution acquires receivables to be paid by an EES client.

In a refinancing scheme the EE project is financed initially through a corporate loan (e.g. overdraft) provided by a bank to an EES provider who is implementing the EE investment in the frame of an EES project.

The client immediately profits from this approach, as he is generally not forced to burden his balance sheet while he takes advantage of the broad scale of benefits of the EE investment.

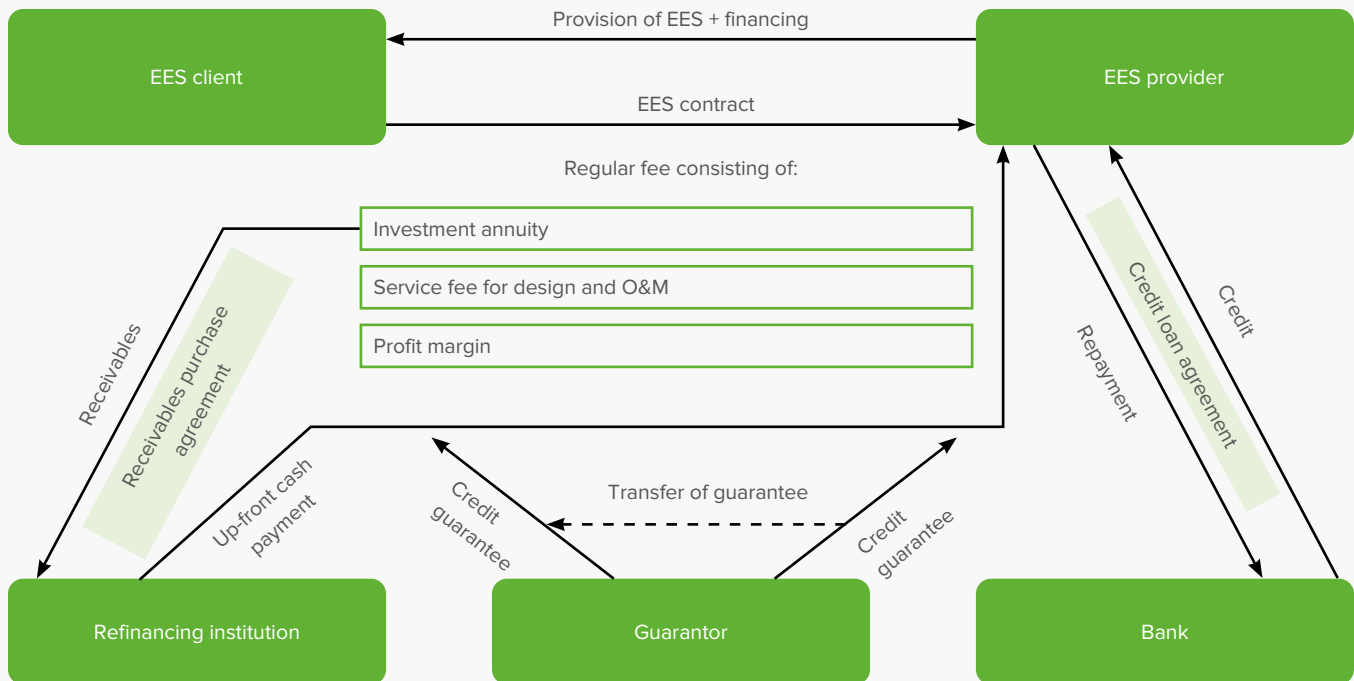


Figure 1. Overview of Refinancing Schemes of Energy Efficiency Projects

A certain period after the investment has been implemented and performance of the investment has been demonstrated, the EES provider sells off the expected receivables to a refinancing institution and gets cash upfront for the receivables, while the buyer gets the right to collect the receivables.

In this way, the EES provider clears his balance sheets and gains leeway for the financing of new projects which it could not realize otherwise. Therefore, the possibility of applying refinancing schemes is a major element supporting the growth of the EES provider.

A survey conducted as part of the QualitEE project shows that borrowed debt predominates as financing instruments for EES projects commonly used in European countries. This analysis was updated in the frame of the REFINE-project with a focus on the use of refinancing schemes across Europe.

2.2. Collateralization of Investments

In its broadest sense, collateralization is an arrangement of security against default risks. In the case of EES, collateralization may be used to protect the regular payment of the EES client to the EES provider. If the EES project is refinanced, the collateral can be passed on to

In summary, this market analysis shows that the use of refinancing schemes is not very widespread. Only in the Czech Republic and Latvia refinancing is considered to be a usual practice. However, through the conduction of expert interviews in 12 countries (Austria, Belgium, Croatia, Czechia, Greece, Slovenia, Spain, Italy, Poland, Germany, Slovakia and Ukraine) it became evident that also in other European countries refinancing models are being applied in some cases.

For example, in Belgium, Austria and Germany refinancing schemes are used, however, not to the same extent as in the Czech Republic. Also, some FIs in Slovenia and Slovakia are offering a kind of refinancing scheme. In Spain and Italy a limited number FIs or investment funds (such as the SUSI Energy Efficiency Fund) finance EE projects via refinancing.

the refinancing institution, so that the refinancing institution is protected against non-payment of the client.

The need for collateral depends on the creditworthiness of the client and is usually lower if the EES client is a public authority.

Generally, if a receivable is purchased from an EES provider, the FI has a contract only with the EES provider and not with the EES client, so it cannot bind the EES client in any way or demand collateral from it. Therefore, in some refinancing models, the payment from the client to the refinancing institution is not collateralized. In this case, which is the usual approach in the Czech Republic, the FI must know the borrower very well and trust its risk and reputation throughout the project repayment period.

Integrated energy contracting (IEC) means a combination of energy efficiency measures with energy supply contracting typically with short term 'operational verification' rather than ongoing measurement and verification.

On the other hand, there exist several cases where the EES contract includes a collateral which originally safeguards the EES provider against the client and which is then transferred to the refinancing institution.

Holding a title to the assets

If the refinancing institution holds a title, we can call this approach an asset-based collateralization of receivables. In this case, at first the EES provider invests in the facility of the client and holds a title to the invested assets. When he transfers the receivables, the title on the assets is transferred to the refinancing institution.

In the case studies which have been evaluated for Austria the title to the assets is constituted in the following way:

- The ESS provider installs EE equipment at the site of the client.
- After the installation of the equipment, an acceptance procedure is implemented, which confirms the delivery of the equipment as agreed and the price for the equipment installation, taking into account potential deviations from the offered price because of changes in the delivery scope.
- The confirmed price of the equipment installation (consisting of design costs, equipment costs, and installation costs) and the financing costs are invoiced immediately after installation. The client, however, does not have to pay the invoice at once, but in equal – quarterly, half-yearly or annual – instalments distributed over the whole contract period.

In this way, justified receivables of the EES provider against the client are constituted, which can be forfeited without recourse to a refinancing institution, because the client already confirmed the due payments.

In case of insolvency of the client, however, it may be quite difficult to make use of the title to the assets, because either the exploitation of some parts of the assets may be impossible due to the regulatory framework, or even if exploitable, the assets may have lost their value.

For the financing institution it may be useful to hold the title nonetheless, because collateralized credit risks require a lower equity ratio than non-collateralized ones.

In the case studies which have been evaluated for Czechia, the procedure is quite similar to the one described above for Austria. However, instead of a formal invoice after acceptance of the installations, the client provides only a confirmation of a payment schedule that covers the full cost of installations. In this way, the repayment is not formally collateralized, but still sufficiently secure, if the client is a public authority or a private company with good creditworthiness.

Another alternative to collateralization through retention of a formal ownership title would be the agreement of a pledge, which would give the holder of the pledge – i.e., at first the EES provider and then the refinancing institutions – the right to use or sell the service of the asset.

Collateralization through the third party

With respect to third parties that may cover parts of the credit risks related to EES projects, three possible options are identified:

- Public credit guarantee, which in most cases can (only) be called when the debtor gets insolvent.
- Credit insurance provided by private insurance companies, which in terms of duration, however, is usually limited to 3-4 years.
- Bank guarantee, which may serve in a first place as unconditional payment guarantee and which can be structured using a public guarantee instrument as a credit risk backstop.

Other forms of collateralization

On the Czech market, in rare cases, real estate collateral is required from an EES provider with low creditworthiness or from an EES provider that has entered the EPC market only recently and has not implemented enough EES projects to prove competence to the refinancing institution. Currently, there is no standard procedure for such cases and it would depend on negotiations between EES providers and banks. However, an EES provider is unlikely to offer real estate collateral for the

entire duration of the EPC contract (8-12 years), rather than negotiating for the bank to accept a third-party

guarantor who is liable for payments in the event of client insolvency.

2.3. Handling of performance risks

In addition to the credit risk (the client does not pay because of economic difficulties up to insolvency), refinancing schemes have to deal with the performance risk (the client does not pay because the supplier did not deliver energy savings or energy supplies as contractually agreed).

Generally, it is very unlikely that a refinancing institution is willing to take over any kind of performance risk from the EES provider. For the refinancing institution it is important to be able to rely on a certain agreed payment, independently from the performance of the EES provider.

On the other hand, the client wants to be sure that the refinancing agreement does not oblige him to pay more than he has to pay according to his agreement with the EES provider.

It has to be ensured that the full performance risk remains with the EES provider. Performance in this context means, in particular:

- Achievement of guaranteed savings;
- Compliance with agreed comfort conditions;
- Other service level agreements, e.g., related to maintenance and operation.

A first element that protects the refinancing institution from taking over the performance risks of the EES provider is the fact that the refinancing arrangement is concluded only after the performance has been demonstrated by the EES provider over the first 1 to 2 years of the project duration.

Secondly, the refinancing institution may not buy the full amount of receivables, but only a certain share (50-80%), so that a security margin against usual performance fluctuations remains.

And thirdly, one common way to ensure that the full performance risk remains with the EES provider, is a non-recourse clause in the refinancing contract. The non-recourse clause implies that the EES client has to pay the instalments to the refinancing institution, no matter what. This means for example that the EES client cannot reduce its payments to the refinancing institution justifying it by insufficient performance of the EES

provider, nor by any other external or internal circumstance.

Therefore, a non-recourse clause in the refinancing contract has to be accepted by the EES client beforehand, i.e., it has to be complemented by related provisions in the EES contract, in detail as follows:

Stipulations allowing for a non-recourse clause in the refinancing contract:

- **Option A:** The EES contract includes an adequately formulated contractual stipulation according to which the EES client explicitly accepts a non-recourse clause in a possible refinancing contract.
- **Option B:** The client implicitly agrees to a non-recourse clause in the refinancing contract through his acceptance of a formal invoice for delivering the assets. In this case, the EES provider holds title vis-à-vis the client which is generally enforceable and which he can transfer to the refinancing institution.

For both options, the EES contract will include a stipulation that the assignment of claims does not relieve the EES provider from any of its obligations.

- Stipulations ensuring that the EES provider compensates the client if due remuneration to the EES provider is lower than the payment due to the refinancing institution. In particular, if an EES project fails to achieve the performance as specified in the contract, the EES provider is obligated by the contract with the client to compensate for savings shortfalls that occur over the life of the contract. This means that the EES provider has to repay to the client the gap between the forfeiting instalment which the client has been obliged to pay to the refinancing institution and the amount which he would have been obliged to pay to the EES provider if no refinancing arrangement had been made.
- Bank guarantee provided by the EES provider to the client with the aim to guarantee the promised compensation as described above.

Furthermore, the scheme may include arrangements that provide an additional ‘safety net’ for the refinancing institution, such as:

- Step-in rights of refinancing institution if the service quality of the EES provider is below a certain level over a longer period of time. However, step-in rights may contradict with public procurement rules, therefore, they may not be feasible for public clients;

- Bank guarantee to be provided by the EES provider to the refinancing institution covering delayed/reduced payments from the client due to performance shortcomings of the EES provider.

The handling of performance risks is crucial in order to distribute the various elements of project risks to the most suitable partner. However, during the market assessment conducted in **the REFINE project** no cases have been reported, where the repayment to the refinancing institution suffered from performance gaps.



2.4. Assessment of Guarantee Instruments

The major impediments for financing EES models are counterparty credit risks, often in a single customer situation (energy offtake by only one customer; no or limited grid access or possibilities to sell to other customers) and technical performance risks. Seen from the perspective of a financial investor purchasing receivables against the customer, both risk types may result in cash shortfall: either because the customer does not pay because he does not have the money to pay (credit risk), or he does not pay because the supplier did not deliver energy savings or energy supplies as contractually agreed (performance risk).

Credit risks are depending on the creditworthiness of the customer: **if the credit rating of the counterparty is high**, then this risk is low. For covering credit risks of customers, a commercial credit insurance can be acquired if such insurance is available at the appropriate terms (usually up to three years). The availability and cost of the insurance premium are depending on the credit standing of the counterparty.

For lower credit ratings and for longer payment terms guarantees by third parties (typically public guarantees) are necessary to reduce counterparty credit risk, as in industry for smaller projects and/or for SME involve-

ment and in the residential sector for residents with lower incomes.

Performance risks are depending on the physical and operational quality of the energy producing or energy generating assets and processes, which are under the control of the owner of those assets. Customers (and financial investors) would expect that such risks are borne by the energy or EES providers. **Usually, performance risks are mitigated and managed by contractual warranties and performance guarantees issued by equipment suppliers** (which are ultimately also depending on the creditworthiness of the suppliers or EES providers).

Insurance solutions like property insurance, business interruption insurance and equipment breakdown insurance may be added. For some components like LEDs or PV panels insurance policies can be bought to cover all technical performance risks; insurance solutions for other EES contracts might also be available under certain conditions.

To avoid performance risks altogether, third-party guarantees to cover performance promises of suppliers and EES providers could provide additional comfort to financial investors and eventually also to public sector asset owners. **An unconditional third-party payment guarantee** would **cover both risk types**, as it could be called whenever a payment becomes overdue, irrespective of the reason for non-payment.

Credit risks and performance risks are embedded in the receivables purchased by forfeiting scheme investors. The distribution of those risks is defined in the contractual terms of the EES contract. Standardized technical and financial project assessment and standardized contract terms are necessary to enable quick and low-cost risk assessment by financial investors. If the customer does not enjoy a strong credit rating, the credit risk has to be covered by credit insurance or by guarantees of third parties with high credit ratings (banks or state-backed institutions). Credit risk coverage is at the same time a prerequisite for securitization.

From a public policy perspective, **public guarantees** are provided for the following reasons:

- The main and well-acknowledged reason for public guarantees for long-term investment loans in the manufacturing sector is the market failure to give SMEs equal access to financing. Thus, **such guarantee instruments are established in most member states and supported by guarantee facilities provided by EIB and EIF**. This type of guarantee is available for EE investments by the manufacturing sector in many countries.

- For the housing sector, either state-backed loan facilities or Public Guarantees for long-term loans are mostly motivated by the goal to offer housing also to less creditworthy individuals or families, therefore as instrument of social policy considerations.

The reason for providing **state-backed guarantees** for financing and refinancing EE investments can be justified differently. Their objective would be to speed up CO₂ reduction in the buildings and industry sector, thereby contributing to climate policy objectives. In this regard such guarantees are pursuing comparable objectives to long-established export guarantees, where the main argument is benefits for economic growth and employment policy. At the same time, it can be shown that such guarantees are particularly effective for SMEs helping them to grow exports much faster. The long-standing experience with export guarantees can also be used for structuring EE investment-related guarantees.

Loan guarantees are provided in many member states for bank loans to finance long-term investments of companies and (in the housing sector) of home owners (state-backed housing loan programmes are usually including an “implicit guarantee” because they are offered to debtors who would not qualify for a commercial loan).

In most cases, **public credit guarantees** can (only) be called when the debtor gets insolvent. They are usually covering not 100 percent, but 80 percent of the loan to motivate the guaranteed bank to manage the loan exposure also in its own interest.

This quite common type of guarantee is protecting creditors from the loss of the asset value of the outstanding loan and is supporting investment in assets which are on the balance sheet of a company or a building owner. It helps asset-based financing of EE investments, for which the house or company owner would otherwise not be able to raise financing because of creditworthiness issues. However, this ‘Insourcing’ of energy investments is neither sufficient nor adequate to succeed in the required renovation wave of buildings or in large-scale decarbonizing industrial processes.

For refinancing EE investments and securitization-backed forfeiting schemes credit guarantees are not the appropriate guarantee type. Loan guarantees cover the repayment of a loan by the debtor. But the EES provider does not grant a loan to the customer. **With forfeiting, the credit risk (more exactly: the risk of payment default by the customer) is transferred to the financial investor, who has purchased future**

receivables against the customer, but did not grant a loan either.

Guarantees which can be called when payment arrears occur are provided by export guarantee systems in many EU member states. This type of guarantees is protecting supplier credit against payment default of the customer. However, this type of guarantees is not simply a payment guarantee which can be called unconditionally when payment becomes due and is not paid on time. Export guarantees are protecting the exporter against a loss from an export contract. They are a 'loss insurance', which has a certain predefined maximum coverage, but pays out only the amount corresponding to the actual damage.

As an example, Oesterreichische Kontrollbank (OeKB) has published Guidelines G9 on export guarantees for forfeited receivables in export contracts. The credit risk situation is the same as for forfeited receivables from EES contracts. These guarantees have been designed for a comprehensive export financing offer: the bank is providing a working capital loan to its bank client for financing the products to be delivered to an export customer who wants a supplier credit and can get a loan guarantee for this working capital loan. After delivery the bank acquires the export receivables (the supplier credit). The bank client uses the receipts from the forfeiting transaction to his bank to repay the working capital loan or to reduce the working capital credit line. The bank's exposure to the export customer is covered with a guaranteed quota of 80 percent by the G9 Export Guarantee. This financing scheme is a recurrent part of the banking relationship between the Austrian Bank and its client.

The complicated calculation of the 'cash loss' in the case of a Guarantee Claim against the Export Guarantee and also the guarantee quota of up to 80 percent can be accommodated in the financing agreement between bank and client. This kind of comprehensive export financing offer could be replicated for the

working capital financing and refinancing needs of EES providers (see chart below) and is in fact a bilateral refinancing scheme established between an EES provider and his bank. But the loss insurance arrangement is not appropriate for protecting 'anonymous' financial investors, because the loss of the exporter will be different from the loss of the investor by a payment default of the customer.

The appropriate protection against the risk of payment default by the customer would be an unconditional payment guarantee on scheduled payments by the customer. Such a payment guarantee would even protect the financial investor against the case that payment is not made by the customer because of non-performance of the energy supplier. Such guarantees are typically issued by private banks against a credit or guarantee line on instruction of a client who needs enhancement of short-term or long-term payment obligations. Public guarantee schemes are rarely structured as unconditional payment guarantees.

Loan guarantees can be a valuable support for asset owners investing themselves in EES projects and for working capital loans to technology suppliers, but they are not appropriate guarantee instruments for refinancing EE investments because they do not cover payment obligations based on a contract on delivering energy or service.

Payment obligations of customers can be the subject of export guarantees, which can also cover payment default risks of purchased receivables when they become due. However, the claim on an export guarantee is covering the cash loss of the exporter. This Loss insurance, therefore, does not necessarily cover the full payment risk of financial investors.

The "ideal" guarantee for refinancing EE investments via forfeiting receivables would be an unconditional bank guarantee which is covering exactly any scheduled amount when due.

2.5. Options for Guarantees to Support Financing of Energy Efficiency and Renewable Energy Investments

Tables 2-4 provide a detailed description of possible options for guarantees supporting financing of energy efficiency or renewable energy investments:

- Guarantees for loans to asset owners (model investment loan guarantee);
- Loss insurance for client payments (model export guarantee);
- Unconditional payment guarantee (model bank guarantee on first demand).

Table 1. Guarantees for Loans to Asset Owners (model investment loan guarantee)

Guarantor	Public guarantee institution
Applicant	Company, EES provider or Building Owner(s)
Counterparty risk	Applicant (Company, EES provider or Building owner)
Beneficiary	Bank or other Provider of loan
Guaranteed asset	Long-term loan to applicant for on-balance sheet investment in Energy Efficiency or Renewable Energy assets or short-term loan to cover working capital requirements
Guarantee quota	80 percent
Claim under guarantee	In case of insolvency of the debtor (applicant) repayment of debt plus interest
Reporting duties	Beneficiary and applicant
Default risk	Insolvency of applicant
Assignment of guarantee	Not provided for
Recourse on	Applicant (but only under insolvency regulations)
Required for	On-balance sheet investments in energy efficiency or renewable energy by asset owner with weak credit standing (long-term investments by manufacturing company or building owner; working capital loans to suppliers or EES providers)
<i>Suitable for refinancing</i>	<i>No</i>

Table 2. Loss insurance for client payments (model export guarantee)

Guarantor	Public guarantee institution
Applicant	EES provider
Counterparty risk	EES-Customer
Beneficiary	EES provider or Bank (after assignment)
Guaranteed asset	Net cash flow from EES-customer receivables; corresponding to standardized terms of contract specified by the guarantor
Guarantee quota	80%
Claim under guarantee	Net cash receipt when payment is overdue (payment minus saved costs and third-party receipts); in case of insolvency of the client all contracted future payments minus saved costs and third-party receipts); no default interest
Performance risk	Not covered
Assignment of guarantee	Possible to Banks with consent by guarantor
Reporting and monitoring duties	Extensive obligations on Beneficiary; risk of denial of guarantee claim if duties have not been fulfilled properly
Default risk	Payment default (credit risk of EES-customer)
Recourse on	EES client by guarantor or by beneficiary representing the guarantor according to the instructions by the guarantor
Rights of guarantor in the event of a claim	Recourse; redemption of the open guaranteed claims; continuation of operation by the applicant (EES provider) right of entry into the EES; replacement of EES provider; transfer of assets by the applicant (EES provider)
Suitable for refinancing	Primarily securing cash flow to EES provider; facilitates refinancing via EES provider's relationship bank; little suitability for refinancing and securitization on capital markets because of guarantee quota and limitation to incurred cash loss

Table 3. Unconditional payment guarantee (model bank guarantee on first demand)

Guarantor	Public guarantee institution
Applicant	EES provider
Counterparty risk	EES client
Beneficiary	Purchaser of accounts receivables from EES contract
Guaranteed asset	Scheduled payments on EES-customer receivables (typically fixed payments)
Guarantee quota	100 percent
Claim under guarantee	Guarantee payment on first demand in the amount of scheduled payment at due date
Performance risk	Covered (because of unconditional guarantee claim)
Assignment of guarantee	Possible with consent by guarantor
Reporting and monitoring duties	Applicant/instructor (EES provider)
Default risk	Credit risk of EES-customer + performance risk of EES provider
Recourse on	EES customer for payment default; EES provider for guarantee payments caused by non-performance of contractual obligation
Rights of guarantor in the event of a claim	Recourse; redemption of the open guaranteed claims; continuation of operation by the applicant (EES provider) right of entry into the EES; replacement of EES provider; transfer of assets by the applicant (EES provider)
Support for	Refinancing of EES contracts
<i>Suitable for refinancing</i>	<i>Refinancing and securitization on capital markets</i>

2.6. Structuring Unconditional Payment Guarantees for Refinancing Energy Efficiency Projects Based on a Public Guarantee Scheme

The best protection for financial investors purchasing receivables against the risk of payment default by the customer would be ***an unconditional payment guarantee on scheduled payments by the customer***. Such a payment guarantee would even ***protect the financial investor against the case that payment is not made by the customer because of non-performance of the energy/ energy savings supplier***.

The financial risk of a financial investor acquiring receivables is payment on time whenever it becomes due. Guarantees covering this risk can facilitate capital-market based refinancing schemes for EE investments if they are:

- Unconditional;
- Assignable;
- Callable when payment becomes due.

The 'ideal' guarantee for refinancing EE investments via forfeiting receivables would therefore be an unconditional bank guarantee which is covering the fixed scheduled payment amount when due.

Unconditional payment guarantees are not provided directly by public guarantee schemes. But if a public loss insurance is available, a payment guarantee by a private bank can be structured using the loss insurance as a credit risk backstop. And when refinancing by selling the receivables to financial investors is secured, a public loan guarantee will be easily available on a working capital loan to the supplier or the EES provider for financing the construction phase.

The steps and the structure of such a combination of private and public guarantees are the following:

- The EES provider applies to the public guarantee agency for a guarantee for a working capital loan by its bank. The loan is used to finance the EE investment to fulfil the investment obligation of the EES provider in the EES contract with the customer.
- After installation, the EE investment is tested for compliance with the performance promise in the EES contract and commissioned by the customer. The customer starts the payments for the delivered energy or energy savings.
- The EES provider applies for cash shortfall guarantee at the public guarantee agency and

asks his bank to provide a payment guarantee to the financial investor who is offering to purchase the receivables against the customer. As a security for the payment guarantee, the EES provider assigns the cash shortfall guarantee to the bank.

- The purchase price for the receivables is used by the EES provider for repayment of the working capital loan (refinancing) to his bank. The loan guarantee is cancelled accordingly (or may be utilized for another working capital loan on a revolving basis).
- If the payment guarantee by the bank is called, the guarantee payment can be recovered from the public cash shortfall guarantee. Based on the guarantee contract between the EES provider and the bank, the bank has recourse against the EES provider for all amounts, which are not recovered from the public guarantee.

In this structure, the public guarantee would cover the fundamental risk of a loss for the supplier by a payment default of the customer ***with 80 percent of this risk***. Based on this guarantee backstop (by assignment of the guarantee claims by the EES provider to the Bank), the Bank would cover the liquidity risk of pre-financing the payment default by the customer (100%) and would have recourse against the EES provider for ***the 20 percent deductible and for possibly lower payments*** by the public guarantor because of cost savings. All obligations concerning reporting, monitoring, etc., would remain with the EES provider as the original beneficiary of the public guarantee.

This structure is possible also if the guarantee claim on the public guarantee can only be made if the customer gets insolvent. However, in this case the risk for the EES provider would be higher because prefinancing by the Bank could be necessary for much longer times; and in case the customer does not get insolvent in spite of the payment default the public guarantee cannot be called at all.

A part of the risk (corresponding to the risk which is not covered by the guarantee quota) will remain with the EES provider. Therefore, the structured guarantee approach will require EES providers with sound creditworthiness and equity endowment.

2.7. Cross-country Analysis of Guarantee Instruments in the Energy Efficiency Services Business in EU countries and Ukraine

A comprehensive overview of guarantee instruments in the EES business in EU countries and Ukraine has been made by **REFINE project**. Key findings and comparative analysis for target countries are presented in Table 5.

2.8. Possible Refinancing Schemes for Energy Efficiency Projects

This generic refinancing scheme for comprehensive public building refurbishment is presented in Table 4.

Table 4. Refinancing Scheme: Comprehensive public building refurbishment

Element	Description
Application field	Comprehensive refurbishment of public buildings.
Market opportunities	Generally, we observe that public building owners tend to implement comprehensive refurbishment projects in a conventional way by ‘self- implementation’ as long as they can afford it. Therefore, we assume that an EES targeting at this application field is attractive mainly to smaller public authorities (municipalities) and for other authorities that lack professional real estate management. For larger portfolios, an EES may lead to a pull-forward effect, i.e. the number of comprehensive investment projects per year may increase.
Collateralisation	The need for collateralisation may be low, depending on the creditworthiness of the public authority. A public guarantee to cover credit risks would be the easiest and probably most cost-efficient way to safeguard payments to the refinancing institution.
Handling of performance risks	The step-in rights of the refinancing institution may contradict with public procurement rules.
Collection of payments	The EES provider will be responsible for invoicing – a certain part of the invoiced amount is payable directly to the refinancing institution.
Off-balance sheet financing	Not relevant.
Non-public debt financing	It would be an attractive driver for public authorities to get offers that fulfil the EUROSTAT requirements without causing high extra-costs, but according to our understanding this seems to be difficult given the current framework conditions.
Organisational set-up	<i>Institutional set-up with predefined roles, responsibilities and work processes is recommended because of high capital investments.</i>

Table 5. Overview on cross-country analysis on starting points for guarantee instruments in the EES business in EU countries and Ukraine

Country	Credit guarantee	Public Guarantee/ Funds	Export Guarantee/ Export Insurance	Credit Insurance	Energy Savings Insurance	Additional information
Czechia	<p>Public clients: No guarantees or insurance are required for refinancing.</p> <p>For private clients: Credit guarantees from commercial banks:</p> <ul style="list-style-type: none"> • Extra costs of minimum of 2-3% • No maturity of 8 or more years <p>→ not suitable for refinancing</p>	<p>Public clients: The Expansion Guarantees are not eligible for the projects aiming at energy savings.</p> <p>Private clients: Guarantees of state aid programs operated by CMZR bank</p> <p>→ not suitable to cover the client's risk of repayment</p>	<p>Performed by Czech Export Bank (CEB)</p>	<p>Public clients: with maximum maturity of 2 years</p> <p>→ use of this insurance for EES projects is minimal</p> <p>Private clients: No information available</p>	<p>No information available</p>	<p>For EES projects with private clients a guarantee to cover the client's risk of repayment would allow for refinancing.</p>
Austria	<p>No special guarantee instruments available for EES projects.</p>	<p>AWS guarantees (loan guarantees and working capital guarantees for SMEs)</p>	<p>Export Guarantee managed by the public development bank OeKB</p>	<p>Credit insurances are usually limited to a duration from 2 to maximally 4 years</p> <p>→ not suitable for refinancing</p>	<p>No information available</p>	<p>Ongoing policy process related to the provision of public guarantees to support EES business and refinancing arrangements.</p>
Croatia	<p>HAMAG-BICRO individual loan guarantees.</p> <p>→ not suitable for refinancing</p>	<p>No special guarantee instruments available for EES projects</p>	<p>HBOR export insurance guarantees</p>	<p>No information available</p>	<p>No information available</p>	<p>For EES projects with private clients a guarantee to cover the client's risk of repayment would allow for refinancing.</p>

Table 5 (continuation)

Country	Credit guarantee	Public Guarantee/ Funds	Export Guarantee/ Export Insurance	Credit Insurance	Energy Savings Insurance	Additional information
Greece	Credit guarantees by commercial banks: Very short term (up to 180 days). → <i>not suitable for refinancing</i>	Hellenic Development Bank (HDB) public guarantees and co-guarantees	<ul style="list-style-type: none"> Export credit insurance program by OAEP Export guarantees by corporate banks 	Credit insurance program to the buyer by OAEP	No information available	Possibility to establish a public guarantee fund managed by HDB to support the financing and refinancing energy efficiency measures.
Italy	Private equity fund FIEE dedicated to EE investments	<ul style="list-style-type: none"> FNEE Guarantee Fund SME Guarantee Fund (Public Guarantee Fund – not specific for EE investments) 	No information available	No information available	<ul style="list-style-type: none"> GoSafe with ESI-energy savings insurance CIS Broker Insurance for EES providers 	The current Italian framework of energy efficiency guarantee funds is rather limited in terms of concrete and accessible offers.
Latvia	No information available	Public guarantees by ALTUM	Export credit guarantee by ALTUM	No credit insurance available on the market	No information available	
Slovenia	Credit guarantees by commercial banks: Extra costs: Up to 2 %	Public guarantees by SID Bank	Export Credit Insurance by SID Bank	No information is available	No information is available	It was planned to establish a guarantee fund for financing EES projects financed from Cohesion Funds. This guarantee fund, however, was not established.

Table 5 (continuation)

Country	Credit guarantee	Public Guarantee/ Funds	Export Guarantee/ Export Insurance	Credit Insurance	Energy Savings Insurance	Additional information
Spain	No information available	<ul style="list-style-type: none"> • Fund GEEVE by the regional government of Extremadura • Public guarantee fund for electro- intensive activities • CESCE Green Insurance Policy 	Export guarantees CESCE	Energy efficiency insurance from Engineering's' Mutual Company (Private EE insurance)	Energy savings Insurance by ESI	The current situation in Spain with respect to guarantees for the refinancing EES contracts is rather undeveloped.
Ukraine	Credit guarantees are provided by commercial and state banks. There are state programmes to support SME where state guarantee is provided for up to 80% of the loan pool amount	<ul style="list-style-type: none"> • State programmes to support SME where state guarantee is provided for up to 80% of the loan pool amount. • No specific product for EES companies but they can apply for the financing under those programmes 	Export guarantees are provided by commercial and state banks	There is no specific credit insurance product on the market for EES loans	There is no specific energy saving insurance product offered for EES contracts	A system of guarantees for the refinancing of EES contracts is not developed in Ukraine.

Key arrangements for refinancing EE investments in the public sector are presented in Table 6. Currently, this generic refinancing scheme is the most widely used

scheme since it is analogous to the case studies evaluated in Czechia, Austria and Belgium.

Table 6. Refinancing Scheme: Energy efficiency investments in the public sector

Element	Description
Application field	EE investments with a focus on building technologies in public buildings.
Market opportunities	The most important EES segment in many EU countries.
Collateralisation	Generally, need for collateralisation may be low, depending on the creditworthiness of the public authority. There exist several cases in practice where the refinancing arrangement is not formally collateralised. However, <i>if</i> collateralisation is required from the refinancing institution, one option is that the EES provider holds a title on the assets which he invested, and transfers this title to the refinancing institution. However, a public guarantee to cover credit risks would be an easier and cheaper way to safeguard payments to the refinancing institution.
Handling of performance risks	<ul style="list-style-type: none"> • Refinancing only after 1-2 years of verified performance; • Frequently, only the receivables related to capex are purchased by the refinancing institution; • Non-recourse clause in the refinancing agreement, complemented by stipulations in the EES contract making sure that the full performance risk remains with the EES provider.
Collection of payments	The EES provider will be responsible for invoicing – a certain part of the invoiced amount is payable directly to the refinancing institution.
Off-balance sheet financing	Not relevant.
Non-public debt financing	It is unclear whether the formal acceptance of capital investments by the client (which enables the EES provider to hold a title on the assets) contradicts with EUROSTAT requirements. Generally, it seems to be difficult to design an approach that fulfils all EUROSTAT requirements without causing high extra-costs.
Organisational set-up	<i>Either ad-hoc set-up, or longer-term collaboration between EES provider and refinancing institution, possibly based on a framework contract.</i>

Key arrangements for refinancing energy supply contracts in the public sector are presented in Table 7.

Table 7. Refinancing Scheme: ESC for public buildings

Element	Description
Application field	Installation of a central heat supply system based on RES for public buildings.
Market opportunities	Decarbonization of existing public buildings represents an attractive market for EES providers. Since public buildings are usually equipped with central heating systems, ESC projects can have an easy interface with the client's system. In some cases, however, there may be a necessity to rebuild the heat distribution system to lower temperature as well. Furthermore, there exists the possibility to combine ESC with the reduction of energy demand through the implementation of energy efficiency measures - an approach which is frequently called Integrated Energy Contracting (IEC).
Collateralisation	Generally, the need for collateralisation may be low, depending on the creditworthiness of the public authority. However, if collateralisation is required from the refinancing institution, refinancing can be connected with the assets, where the refinancing institutions get transferred the title on the assets from the EES provider.
Handling of performance risks	<ul style="list-style-type: none"> • Long-term collaboration with EES provider; • Refinancing only after 1-2 years of verified performance; • Only the receivables connected with the assets are purchased; • Step-in rights of refinancing institution in case of serious underperformance of the EES provider – however, step-in rights may be contradictory with public procurement rules.
Collection of payments	The EES provider will be responsible for invoicing. A certain part of the invoiced amount is payable directly to the refinancing institution.
Off-balance sheet financing	Not relevant.
Non-public debt financing	It is an attractive driver for public authorities to get offers that fulfil the EUROSTAT requirements – for ESC this may be easier than for EPC, because there is a clear(er) interface between the assets of the ESC-project and the client's systems. Therefore, economic ownership can be easier retained by the EES provider. There may emerge, however, a contradiction between the wish of the refinancing institution to hold a title and the wish of the public client to fulfil the EUROSTAT requirements. The availability of a public guarantee would help to resolve this conflict of interest.
Organisational set-up	<i>Either ad-hoc set-up, or longer-term collaboration between EES provider and refinancing institution, possibly based on a framework contract.</i>



3. Recommendations for Designing Energy Efficiency Support Schemes in Ukraine

3.1. Key Macroeconomic Trends

The availability of financing for EPC projects on a country level and appropriate financing schemes used are determined by the following factors:

- Income level;
- Macroeconomic parameters (inflation level and interest rates);

- Adoption of energy efficiency policies in a country;
- State of the banking sector.

Figure 2 provides a summary of typical energy efficiency support measures with key macroeconomic parameters.

Figure 2. Macro-Economic Factors Influencing Energy Efficiency Support Mechanisms

Country	Interest rate, %	Country Group	ESCO market Support Instruments
Japan	-0,10	High income	Subsidies for EE retrofits
Thailand	1,50	Upper middle income	EE Revolving Fund
Malaysia	2,75	Upper middle income	Financial incentives for EE projects (National EE Action Plan Efforts)
Euro Area	3,00	High/Middle income	ESIF, Horizon 2020, Project Development Assistance, European Energy Efficiency Fund (risk-sharing facility)
South Korea	3,50	High income	ESCO Fund
Singapore	3,58	High income	ESCO Fund
China	3,65	Upper middle income	Capital subsidies for EE CAPEX; income tax exemptions for ESCO
United Arab Emirates	4,65	High income	Super-ESCO
United States	4,75	High income	State-supported programs for public and private sector
Saudi Arabia	5,25	High income	Super-ESCO
Philippines	6,00	Lower middle income	Fiscal and tax incentives for EE projects
India	6,50	Lower middle income	Partial risk guarantee facilities and other financial assistance
Ukraine	25,00	Lower middle income	State-supported programs, financing from donors and IFIs

Country Group	Typical Energy Efficiency Support Mechanism
High income	Subsidies for energy efficiency retrofits ESIF, Horizon 2020, Project Development Assistance, European Energy Efficiency Fund (risk-sharing facility) ESCO fund Funding and grants from multiple agencies Super ESCO
Upper middle income	Energy efficiency revolving fund Financial incentives for energy efficiency projects Capital subsidies for EE CAPEX Super ESCO
Low middle income	Fiscal and tax incentives for energy efficiency projects Partial risk guarantee facilities and other financial assistance

According to the data presented above, for lower middle income countries financial incentives for energy efficiency projects as well as partial risk guarantee facilities

are the most common schemes supporting energy efficiency investments, including EPC contracts.

3.2. Current Trends of the Banking Sector

The state of the banking sector in Ukraine and its willingness to invest in energy efficiency can be a crucial factor supporting stable ESCO market development in the country.

Annexes 6-12 provide a detailed overview of the current state of credit portfolio of top Ukrainian banks, and distribution of loans granted economic activities.

It can be noted that top Ukrainian banks currently have a diversified credit portfolio in sectors relevant to ESCO

business. SME's businesses play an important role in credit portfolio in sectors relevant to ESCO business in Ukraine.

As a result, the banking sector in Ukraine can play a crucial role in providing financing for ESCO projects given that appropriate ESCO market support tools are established in the country.

3.3. Status of Energy Efficiency Investments in Ukraine

Total energy equipment and efficiency market in Ukraine values at 3,0-3,5 USD Billion per year.

The investment activity in the energy sector in 2022 remained at a high level despite the war. For example, the monthly import of energy efficient equipment has

demonstrated a stable growth since March 2022. It demonstrates that energy efficiency market in Ukraine has high resilience and potential for future growth, which provides good market opportunities for scaling-up private investments in this sector.

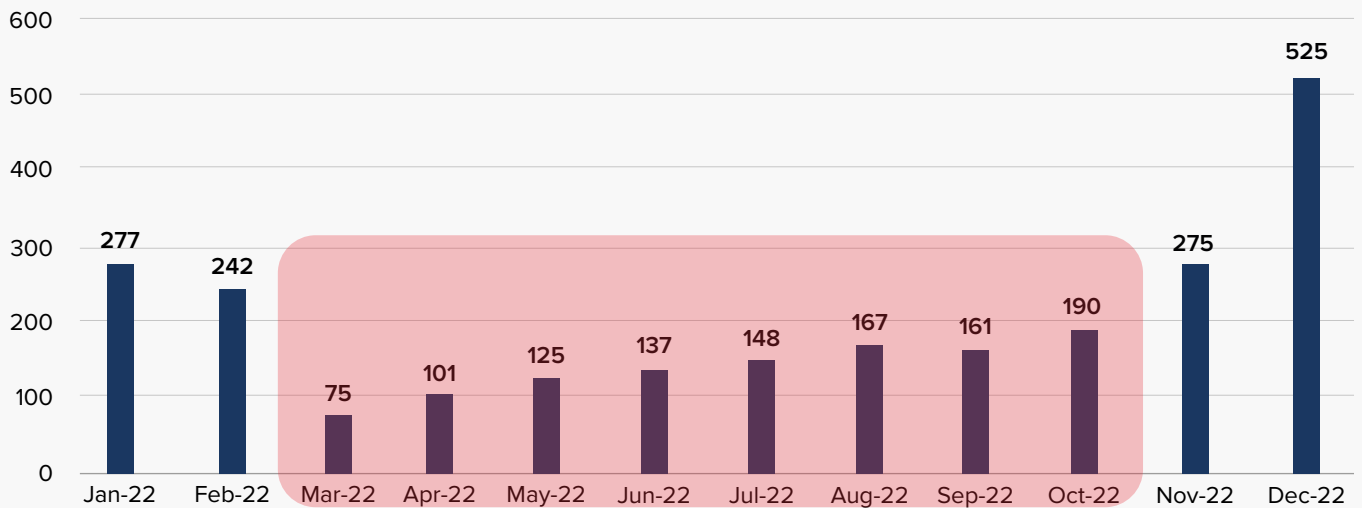


Figure 3. Monthly Import of Energy Efficiency Equipment to Ukraine in 2022, Million USD

Energy efficiency financing provided by the Government is not sufficient to meet the current and prospective investment needs in Ukraine. For instance, total government-supported financing of energy effi-

ciency projects in Ukraine exceeded USD 61,8 Million in 2018-2021, that, however, was just about 1 percent of total energy efficiency investment in the country.

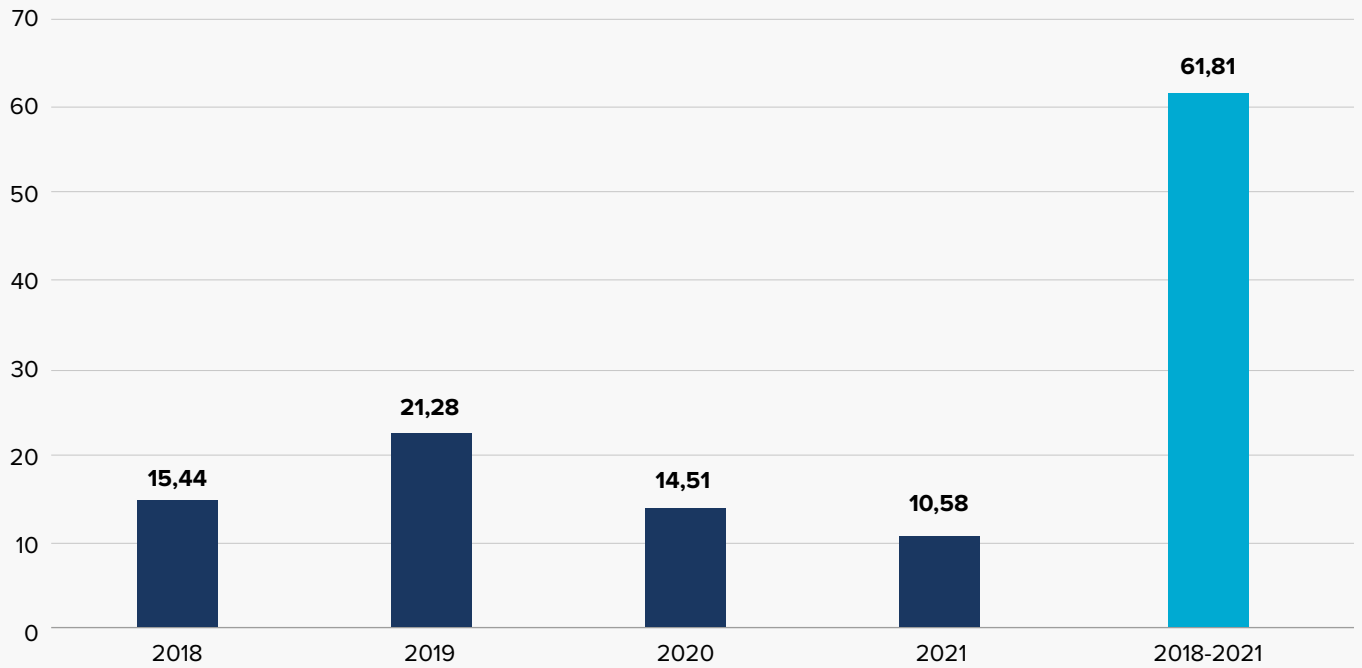


Figure 4. Government-Supported Expenditures in Energy Efficiency Projects in Ukraine in 2018-2021, Million USD

The funding from the international financial institutions and donors serves as a benchmark of investment attractiveness of different sectors and catalyzes commercial financing.

An analysis of volumes of financing of the energy sector

via IFIs and donors in Ukraine for the period 2011- 2021 shows that this market has accumulated above USD 3,8 Billion. In 2019 total energy sector investments in the energy sector through IFIs and donors reached USD 589 Million (Figure 5).

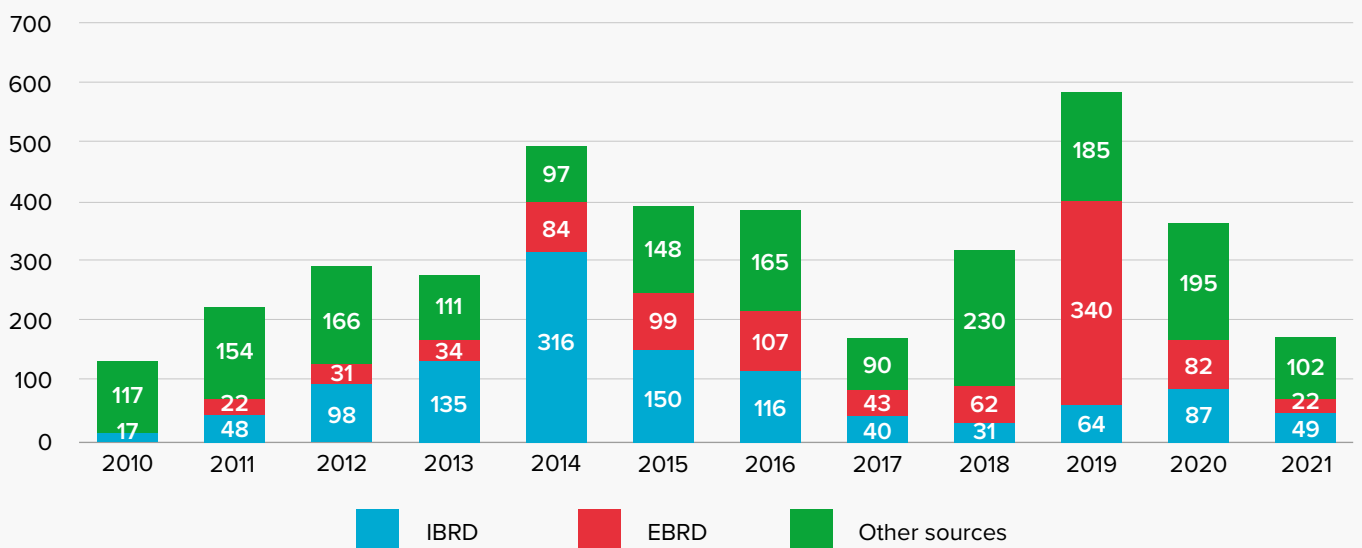


Figure 5. Financing of Energy Projects in Ukraine from International Sources in 2010-2021, Million USD

IBRD and EBRD are key sources of international financing for energy sector projects in Ukraine in terms of portfolio size (USD 1,152 Billion and USD 926 Million

respectively). The cumulative financing from other sources reached USD 1,761 Billion.

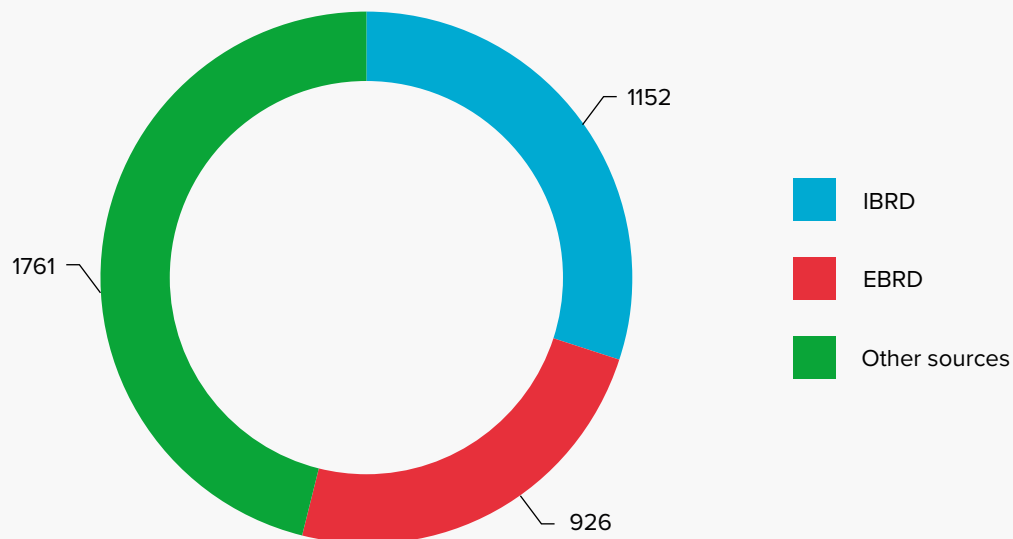


Figure 6. Cumulative Financing of Energy Projects in Ukraine from International Sources in 2010-2021, Million USD

Typical EPC contracts implemented in Ukraine have budget varying from USD 3 to USD 211 thousand and contract implementation period about 5-7 years compared to EUR 0,5-4,5 Million and 10-15 years in EU member states.

Implementation of complex thermal modernization of public buildings requires increased project budgets (up to USD 0,3-0,6 Million) and longer project implementation period (up to 10-15 years), but can generate higher energy savings (up to 40-60%) compared to typically implemented energy efficiency measures.

3.4. Key Perspective Areas for Future Donor-Supported Project Interventions in ESCO Market

The following summary of perspectives the of ESCO market in Ukraine can be made taking into account the best practices analyzed in this report as well as institutional arrangements, historical ESCO market trends and barriers identified:

- Mature energy efficiency markets (China, USA, EU member states) demonstrate diversification of sources of investments. ESCOs play an important role in implementation of energy efficiency projects worldwide.
- Developing countries (India, Thailand, China, Turkey) used donor financing and sources from IFIs to launch the ESCO market.
- World Bank, EBRD, GEF play a key role in providing long-term financing and capacity to support ESCO market development. Providing equity and setting up revolving funds and guarantee facilities are the key intervention point for IFIs and donors in the process of ESCO market development.

- Macroeconomic situation in a particular country plays an important role in selecting ESCO market support strategy. For example, for lower middle income states financial incentives for energy efficiency projects as well as partial risk guarantee facilities are the most common schemes supporting energy efficiency investments, including EPC contracts.
- Institutional environment is another contributor for success for ESCO market development. The Entrepreneurship Development Fund of Ukraine has the best capacities to support development of ESCO market in Ukraine with different market-based schemes, including compensation of interest rates and providing guarantees for ESCO loans. Other potential partners are Ukrfinzhytlo, Municipal Enterprise “Project implementation unit for the Kyiv public building energy efficiency project” and Ukrsvitloleasing, whose institutional capacity and mandate can be useful to support Super ESCO/regional ESCO development.
- Mature ESCO market infrastructure is based on active cooperation with commercial banks. The following Ukrainian banks can be mentioned as top financial institutions to support ESCO market development based on their feedback and current loan portfolio: “Ukrghazbank”, “Oschadbank”, “PrivatBank”, “Lviv” and several others.
- Development of energy efficiency refinancing instruments can be an important step to support development of ESCO market in Ukraine. The best practices of EU member states and possible options outlined in reports implemented by REFINE Project can be recommended.
- There is a consensus among energy sector stakeholders that scaling-up of ESCO market in Ukraine can be achieved through the implementation of a large-scale project implying cooperation with donors and IFIs, having a positive track record in support of the energy efficiency market in Central and Eastern Europe. The following organizations can be recommended: GEF, World Bank, EIB, EBRD.

The following structure of perspective ESCO market support project can be recommended based on preliminary consultations with SAAE:

- **Component 1.** *Support to scaling-up ESCO contracts (elimination of market/legal barriers, improvement of project planning quality, etc.).*
 - **Component 2.** *Support to development of a single database for EPC projects.*
 - **Component 3.** *Roll-out of Super ESCO and 1-2 municipal ESCOs.*
 - **Component 4.** *Other mechanisms for reducing the risks of investments in energy efficiency in the public sector.*
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Scan the QR code to access the annexes.

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