Global Environment Facility

United Nations Development Programme

"REMOVING BARRIERS TO INCREASE INVESTMENT IN ENERGY EFFICIENCY IN PUBLIC BUILDINGS IN UKRAINE THROUGH THE ESCO MODALITY IN SMALL AND MEDIUM SIZED CITIES" (PIMS 1275)

INCEPTION REPORT

KYIV, UKRAINE

2017

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LIST OF ACRONYMS

CO2	Carbon dioxide
CSO	Civil Society Organization
EMIS	Energy Management Information System
EPC	Energy Performance Contract
ESCO	Energy Service Company
FSM	Financial Support Mechanism
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
OSBB	Housing cooperative
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
US	United States of America

BACKGROUND

The Ukrainian economy is characterized by high-energy consumption and high carbon intensity throughout almost all sectors of the economy, including both residential and public buildings. In 2005, the level of carbon intensity in of the Ukrainian economy topped the chart worldwide at 3.67 kg of CO2/$ of GDP, 3 times as much as that in the US and almost 7 times that of France. As per Ukraine's Report on Demonstrable Progress under the Kyoto Protocol (2006), that level was expected to drop down to 2.6 kg of CO2/$ of GDP by 2015.

The main reasons for the high levels of carbon intensity include obsolete and outdated capital stock in the power generation and industrial sectors dating back to when Ukraine was part of the Soviet Union, as well as old and outdated building stock in the government, private and communal sectors. Ukraine has substantial unrealized energy efficiency potential; the IEA's Ukraine 2012 estimate puts it at 20-30% of the energy supply - a magnitude that should ensure that it is accorded a high priority in a sustainable energy policy.

The energy sector alone contributes 75% of the country's overall greenhouse gas emissions. (Source: National Communications to the UNFCCC, 2006). The building sector consumes 37% of total heat and 25% of all electricity in Ukraine, making this sector a major contributor to greenhouse gas emissions. Energy efficiency in buildings in Ukraine is on average approximately three to four times lower than that in West European countries (GIZ, 2014). The outdated codes regulating the construction of buildings do not allow for exploiting economic and environmental benefits of district heating, which is extremely inefficient in Ukraine. The lack of control equipment, metering systems and consumption-based billing has meant that there are no incentives to implement energy-efficiency measures.

The majority of the building stock in the country dates back to the Soviet era (80% of buildings were constructed prior to 1950) and, hence, needs immediate modernization or even replacement. Moreover, during the construction boom of 2003 – 2008, new buildings where constructed according to old Soviet era (GOST) standards. In addition, most of the public buildings do not have energy managers responsible for energy management and best practice for energy management in public buildings is not followed.

Unlike in some other countries, there is no nationwide data base of energy consumption in public buildings across Ukraine. In Ukraine, the housing sector consists of 1.1 billion m2 (in 2012/2013) of residential space (19,288,000 apartments). Approximately 67% of the total number of apartments is situated in multi-apartment buildings, housing approximately 34 million people, with 95% of households having private ownership of their housing – privatisation of apartments started in 1992; the remaining 5% is still state-owned and are mainly utilised by Government officials. Some estimates indicate that at least 80% of the refurbishment needs of the existing buildings are either related to energy savings or energy distribution.

As most buildings do not have regulators/thermostats, they get "overheated" in winter and it is very common for residents to regulate their indoor temperature during the heating season by simply opening up a window or leaving a "window leaf" (fortochka) permanently open, thus dumping heat to the cold weather outside. Also, suffice it to say that most of the apartment buildings have no Homeowners Association or Management Board; hence, no maintenance or repair is undertaken on the "common property", resulting in the shells/roofs of the buildings falling apart.

Poor physical conditions, absence of metering and heat consumption measurement data of, low heat properties of walls/shells, lack of regulators/thermostats and the fact that consumers do not have the technical option for thermal energy use management lead to extremely high levels of heat and water consumption. The condition of more than a third of water, sewage and heating networks is critical.

Modernization/reconstruction is currently required for approx. 30% of thermal points, 40% of pumping equipment and boilers, more than 20 thousand elevators, etc.
The project's goal is to reduce greenhouse gas emissions by creating favorable legal, regulatory, market environment and building institutional, administrative and technical capacities to promote energy efficiency measures in public buildings. This includes hospitals, schools, governmental and higher education facilities, kindergartens, orphanages, pharmacies, employment centers, libraries and museums, and uses the ESCO model.

The project focuses on small and medium sized cities and implies the creation of a single nationwide energy consumption database along with an Energy Management Information System (EMIS) in Ukraine. Over the five-year implementation period, 10 pilot energy savings projects will be implemented in 10 different Ukrainian cities and are expected to serve as best practice examples to be replicated in other towns throughout the country. The project will actively engage women and contribute to gender equality in a traditionally male-dominated energy sector. The project will lead to 2,346 MWh of thermal and 268 MWh of electrical energy savings as well as a total CO_2 emission reduction of 8,893 tons.

Project goals

- Formulate and introduce a streamlined and comprehensive framework to promote energy efficiency in public buildings through strengthening of monitoring and enforcement mechanisms.
- Promote private investment in energy efficiency in public buildings through establishment of a Financial Support Mechanism.
- Implement at least 10 pilot projects using the Energy Performance Contract modality to demonstrate the energy and cost-saving potential of energy efficiency measures in different municipalities.
- Establish an institutional basis and comprehensive nationwide Energy Management and Information System.
- Assist the Government to address the barriers to transform the market to promote investments in energy efficiency in public buildings.

Expected Results

- Streamlined and comprehensive legal and regulatory framework to promote energy efficiency in public buildings is developed.
- Innovative Financing Support Mechanism is adopted and capacity of ESCOs developed in order to promote investment in energy efficiency in public buildings.
- Pilot projects, which demonstrate the energy and cost-saving potential of new energy efficient measures, are implemented.
- Institutional basis established to support energy efficiency in public buildings and implementation of a nationwide Energy Management and Information System.

OVERVIEW OF THE WORKSHOP

Inception Workshop for the Global Environmental Facility financed and United Nations Development Programme implemented Project "**Removing Barriers to increase investment in Energy Efficiency in Public Buildings in Ukraine through the ESCO modality in Small and Medium Sized Cities**" took place in Kyiv on 23 June 2017 at Alfavito Hotel.

The event was attended by representatives of UNDP in Ukraine, UNDP in Moldova, Ministry of Regional Development, Construction, Housing and Communal Services of Ukraine, State Energy Efficiency, Ministry of Education of Ukraine, National Academy of Science, Public Union "Energy Service Association of Ukraine", Chamber of Commerce of Ukraine, CSO "Public-Private Partnership", CSO "Energy efficiency framework:" representatives of local authorities, private and public institutions and ESCOs.

Total number of registered participants was more than 60 people.

Olena Maslyukivska-Samberg, Head of Energy and Environment Sector, UNDP in Ukraine opened the Inception Workshop and described the UNDP in Ukraine contribution for Sustainable Development in Ukraine.

Olena Maslyukivska-Samberg, in her welcoming speech also noted the importance of the Project goals for Ukraine and the purpose of the Inception Workshop.

"*Over the years, private and public sector, donors and international organizations have been working to promote energy saving and energy efficiency in Ukraine. This is due to the fact that this issue is descendant from the Soviet era and requires the coherent efforts of all the participants to solve it.*

We have already received a lot of feedback that this Project is really relevant to the country, and it is started on time.

As for today's workshop. Its goal is to not only announce the start of the new Project but also to get involved with the support of all of you and receive viable comments and suggestions for its implementations."

Roman Radchenko, Head of Energy Saving Section of the Department of Reforms and Development of Housing and Communal Services Strategies of the Ministry of Regional Development during the welcoming

speech mentioned that two historical bills were passed in the sphere of energy efficiency: about energy efficiency and about energy efficiency fund.

"It is a basis which allows to develop energy efficiency in our country. We are interested in development of collaboration with ESCO, UNDP in this sphere. This sphere was popularized a long time ago in Europe . That is why this quite powerful market has to be realized in Ukraine."

Roman Radchenko underlined the importance of the Project and hopes that the progress will be estimated in a proper way abroad and as a consequence investment and technological advances will be directed to Ukraine.

John O'Brien, UNDP Regional Technical Advisor, Climate Change Mitigation, Europe & CIS Region, mentioned in his speech that he is being involved in project activities in Ukraine for already seven years.

Three key themes of **John O'Brien's** speech were:

1. UNDP and its work on energy efficiency in the region.

"GEF is the main partner of UNDP to sustainable energy projects"

"Post-Soviet area is a very perspective area to work on energy efficiency."

2. The reasons why ESCO project did not succeed.

3. Challenges in terms how to implement successfully the project "Energy Efficiency in Public Buildings".

In the matter of Croatia`s experience in project realization **John O'Brien** pointed out: *"There was energy manager in every city In Croatia, who could look after energy savings in the place. Besides, Energy information system turned out to be an extremely useful tool in municipalities in energy efficiency. In Croatia approximately one hundred of people are involved to this project, which is being realized in 114 cities, 20 counties, 20 ministries, 30 municipalities, 25 governmental institutions. At the same time governmental engagement is at a high level."*

"National Database System of Energy Consumption is not enough to make the project successful, there should also be an institution responsible for national energy system,"- underlined **John O'Brien**. *"In a nutshell, this project is about ESCO, energy management and working in small and medium-sized cities."*

John O’Brien hopes that it will be possible to carry out a project on the basis of previous experience.

Svyatoslav Pavlyuk, Chairman of the Kyiv Branch of All-Ukrainian Associaton “Energy efficient Cities of Ukraine” mentioned that he has a positive attitude towards the start of the project. Also he underlined that there are no protection and guarantees for investors in Ukraine, except the budgetary code, and it is a significant disadvantage.

PRESENTATION OF THE PROJECT

Sergii Varga, Project Manager of Energy Efficiency in Public Buildings, presented the project and noted that it is aimed on small and medium-sized cities; its scope schedule is 2016-2021 years.

Sergii Varga noticed that investments should go to increase energy efficiency in public buildings and that the project will give a great effect in the form of reduction of greenhouse gas emissions, electricity consumption, creation of new workplaces. *"We hope that there will be co-financing of the project. Current situation is the next: Ukraine is the most not energy-efficient country in Europe. The project should be a turning point. "*

According to **Sergii Varga,** the main components are legislation, investment promotion, guarantees, tripartite agreements, participation of interested third parties, implementation of pilot projects (up to 10 cities, but maybe more), energy management and energy monitoring.

Another important aspect is the creation of a single information system, where energy efficiency data can be collected for all stakeholders.

"The main partners of the project are the Ministry of Regional Development, the Ministry of Education, the Ministry of Environment and Natural Resources, the Ministry of Energy, the Ministry of Health, the Ministry of Justice, banking sector, business, experts, scientists. "

At the end of the project's presentation, **Sergii Varga** called on to join the project, because, according to his words, *"we are doing a common cause." "I want the project to be effective and successful, I look forward to cooperation."*

Yuriy Favorskiy, Chief Engineer of the Institute of Renewable Energy of National Academy of Sciences of Ukraine, took an interest in the way of how renewable energy sources will be used in the project. *“After all, energy efficiency and renewable energy sources are not opponents, vice versa they exist in rank and file.”*

John O'Brien, UNDP Regional Technical Advisor, Climate Change Mitigation, Europe & CIS Region, answering to Yuriy, mentioned that energy efficiency buildings could include mixture of energy efficiency and renewables. *"There is nothing in the project that we could not combine"* - told **John O'Brien**, - *"so I fully agree with your comment, we definitely will take it into account."*

Oleksandr Sigal, Advisor to the Cabinet of Ministers on Energy and Ecology, pointed out that there were attempts to use ESCO system and thar its further need is indispensable.

In order to have success in the projects, **Oleksandr Sigal** mentioned that investors` money have to be protected.

"We should take into account possibility of signing a tripartite treaty. Insurance company will be the third party to an agreement. If these treaties become tripartite, investor will understand that he gets his money back despite situation in Ukraine or changes in the legislation. Then inversions will come."

Besides, **Oleksandr Sigal** mentioned that this project is strategically necessary, as in most cases public buildings disbalance heat supply system, disconnecting from it.

"The load for boiler-house in this case falls, efficiency factors falls, network needs to be rebuilt. It's still a municipal expense. If you look at the savings not from the position of one building, but from the standpoint of economy for the city as a whole, then the economy converges. Therefore, this project is beneficial. "

Irina Zapatrina, Chairman of the Board of the Ukrainian Center for Public-Private Partnership, made a proposal to implement its own organizational-financial mechanism in the project. Besides, she indicated: *"World experience shows that there should be different mechanisms for implementing this task. We now concentrate on just one."*

Irina Zapatrina expressed her desire to try another mechanisms on pilot projects and to determine what is more suitable for the realities of Ukraine.

Yevgen Nikitin, Director of Arnika-Center Ltd., said that at the moment the idea of ESCO is beautiful only in words, but it does not work.

"ESCO is a beautiful car, which is nice to look at, but which does not work yet. The purpose of this project is to increase the power of this car. "

In addition, **Yevgen Nikitin** proposed to involve in the project heat supply companies.

"The idea is to engage partners to the project, not only those who get help, but also those who will have an effect outside of this building."

Vyacheslav Lesovik, chairman of the board of civic organization “Energy Efficiency School”, drew attention to the fact that this was the first presentation of the project, where at the initial stage its organizers spoke about openness and readiness for criticism, what they would take into account in the further activity.

"The project is set up for constructive cooperation with all interested parties."

"Speaking about success and results of energy efficiency development during the last years, we can say that the situation has changed dramatically: the legislation has changed, real financial resources have appeared: both state and international support programs(it is more than 2 billion dollars). But the application of funds is at a very low level. After all, in most cities there are no specialists. "

Vyacheslav Lesovik asked if the lack of personnel was taken into account in the project insofar as required*. "It is a question of specialists both at the municipal level and in financial organizations with the purpose of effective use of funds; Also in the insurance business in order to protect the investor. The question of education is still actual. "*

Sergii Varga, Project Manager of Energy Efficiency in Public Buildings, said that there is a component in the project that aims to extend and adopt

practices; a component for creating energy management in the cities, which will obviously include training. Also **Sergii Varga** noted that the financial mechanism includes training and work with bankers, who can explain to people about the product.

John O’Brien, UNDP Regional Technical Advisor, Climate Change Mitigation, Europe & CIS Region, noted that one of the problems of teaching people in Ukraine is that they often migrate to Poland after it. **John O'Brien** also said that the trainings of governmental payroll is not enough; much more should be done.

Anton Kovalishin, a representative of DTEK ESCO, noted in his speech that energy suppliers could indeed be a part of the ESCO mechanism. *"They can be quite reliable partners, there may be a synergy effect, based on the fact that we reduce the level of energy consumption at the customer level and also implement ESCO projects at the level of the heat supply company. When we optimize the entire network from production to supply and energy consumption, it could have the greatest effect. In addition, energy suppliers can help customer to figure out the problem of energy losses. "*

Concerning training, **Anton Kovalyshyn** noted that it is necessary to train not only the people who work in the project, but also its clients. **Anton Kovalyshyn`s** company has already taught energy audit and energy management about 450 people. He is also desperate to share experience.

Oleksandr Boyko, chairman of the Energy Services Union of Ukraine, made a suggestion about energy audit of one of the objects made according to energy-service contract; it should be done on the final stage of project preparation.

"There is an idea of co-financing with grants. The amount of this funding and real indicators of the mathematical model of the energy needs of the building can give answers to many questions in advance. Moreover, it does not take much time."

Hank Van Zyl, UNDP Community Based Approach for Local Development Project Manager, said that the project was a response to many questions; he also supported the proposals of the previous speakers on new mechanisms, co-financing, training on places.

"UNDP and Ukraine have experience of sharing information on best practices. But we still think of possibility of that people will be trained and lost. "

In addition, **Henk Van Zyl** emphasized on the importance of disseminating of information in universities and its enshrining in curricula.

In the matter of the project **Hank Van Zyl** said: *“Nowadays 25 small and medium-sized cities are ready to develop energy efficiency. There are lots of mechanisms which are ready. With the real knowledge, experience and if we are focused and keep supporting this project, it will have success.”*

Sergii Parasochka, a representative of the company "Teplocomplekt" said that it is a difficult task to ensure investment attractiveness for the complex implementation of the work. **Sergii Parasochka** proposed to do individual works instead of complex ones that would be attractive for investment to his mind.

Sergii Varga, Project Manager of Energy Efficiency in Public Buildings, answered that there will take place both complex works and individual ones in the project. Everything will be done to have progress.

Oleksandr Polyagan, representative of the UTC from Sumy region, asked whether some UTC(united territorial community) could take part in this project.

Sergii Varga, Project Manager of Energy Efficiency in Public Buildings, replied that UTCs can participate in the project, but maybe in smaller scales. *"We will do even small actions in villages. This is an important offer. No one will be left aside. "*

Viktor Sorokin, Corresponding Member of National Academy of Science of Ukraine, Chairman of the Association of LED Technology Manufacturers, made the following suggestion: in the context of energy efficiency in public buildings it should be mentioned not only of thermo-modernization, but also of energy-efficient lighting.

"Lighting is the easiest and fastest way to get back the money spent. The effectiveness of LED technology, in comparison with incandescent lamps, has grown. It should be taken into account both heat and light. "

Also, for the implementation of monitoring and management systems **Viktor Sorokin** proposed to apply to the Academy of Sciences, which *"will be able to show some things on the devices."*

Sergii Varga, Project Manager of Energy Efficiency in Public Buildings, noted that he supports science, but practical application is more important for the project. **Sergii Varga** also supported the idea of energy-efficient lighting, and pointed out that it can quickly warrant.

OTHER PRESENTTATIONS AND DISCCUSIONS

Eric Berman in his presentation mentioned in his speech that most public buildings in Ukraine were built 40-50 years ago and if not to invest money, they will destroy in the next decades.

“You need to choose now. In the next few years you either renovate buildings and expand lifetime of buildings or do nothing, in that case in some years there will be no places for living or for educating.“

Besides, **Eric Berman** calls on municipalities to *“take responsibility, choose schools and buildings which need reconstruction and stop shifting responsibility on ESCO.”*

Daniel Fjaertoft, Representative of Sigra Group company, in his presentation raised the question of possibility of combination of total building renovation with ESCO projects on energy reconstruction of these projects.

"There are two options: either we separate total building renovation from ESCO (for what I am standing) or you can try to combine them, as Eric suggests. I think that we will need to think about new schemes, financial mechanisms to combine them. "

Daniel Fjaertoft shared the experience of Norway in the energy efficiency projects:

"An EPC (Energy Performance Contract) is used instead of the ESCO term in Norway. The bottom line is that the contractor resumes responsibilities to achieve energy savings and gives guarantees in a size of 30%. The municipality accepts this guarantee, applies to the bank and gives the contractor`s guarantee of a pledge, then it receives a cheap loan, on account of which it pays to the contractor. This model is similar to the one in Dnipropetrovsk. The difference is that in Dnipropetrovsk project consultants, international organizations, municipal structures created the project, and in Norway, EPC assumes full responsibility. In Norway, those who guarantee results, resume responsibility."

Also, **Daniel Fjaertoft** told about the experience of implementing such projects in Russia and in large cities of Ukraine, such as Chernivtsi and Ivano-Frankivsk.

Igor Cherkashin, Coordinator of the Expert Platform for Energy Efficiency, emphasized in his speech on the necessity of finding contact with people's deputies and the Cabinet of Ministers to cancel of restrictions on the exclusivity of open tendering on the stage of treaties conclusion.

Moreover, **Igor Cherkashin** pointed up on the necessity of separating terms “energy service” and “energy management” in the legislation.

Also he underlined that energy management is impossible to exist without a regular database monitoring system of energy consume before the actions and in the moment of their realization.

The annual certification of buildings and the synchronization of these data with the base are still important issues; implementation of a single mandatory certification system will be our final goal.

Igor Cherkashin also put forward the proposal to organize round tables for energy auditors in order to miscalculate the coefficients for different regions of Ukraine; also with bankers, financiers in order to create a consolidated system for ESCO.

The next proposal was to create a unified methodology with a well-defined roadmap for cities.

"It is necessary to oblige the mayors to create municipal modernization funds that would allow to reduce in the interest rate on credit funds that may be directed to ESCO-companies financing."

As a result, **Igor Cherkashin** said: *"The project makes sense. Also, separate platforms are needed for technical, financial, organizational, normative points and also separate discussions and round tables make sense. Thus, the project has to put into effect its goal in 4 years. "*

Andriy Lisovik, representative of Kyiv-ESCO communal enterprise, emphasized on the imperfection of Ukrainian legislation, according to which it

is impossible to move away from instant controls, prosecutors, checking bodies, etc. It restricts activities of the company.

Nicolae Zaharia, project manager from Moldova, took up the question of direct purchases and asked whether the mayors would have enough knowledge in direct negotiations on the issue of the quality of the services offered.

Igor Cherkashin, coordinator of the Expert Platform for Energy Efficiency, answered that public tenders are a positive phenomenon when it is referred to something simple, when there are certified products; Instead, when it is referred to complex services, it involves some inconvenience which consists in the individuality of each object.

Nicolae Zaharia, Project manager from UNDP in Moldova, in his presentation, pointed out that it is impossible to copy foreign experience. *"Every case is individual,"* - he said.

Nicolae Zaharia shared the experience of Moldova: *“In Moldova, there is a number of laws on energy efficiency of buildings, certification of buildings, etc.*

The Ministry of Economy is responsible for the energy sector, the Ministry of Regional Development monitors over energy efficiency in buildings (after the reform it united with the Ministry of Economy), Energy Efficiency Agency is responsible for implementing the policies of the Ministry of Economy, Energy Efficiency Fund takes care of financing projects, there is also a market regulator like everywhere. "

The speaker said that the project started in 2015, total sum was 1 million 450 thousand dollars. 150 thousand dollars were funded by UNDP. The project realization takes place only in the capital(20 pilot projects).

Nicolae Zaharia explained about the financing mechanism and credit facility of the project: *"The project has created a guarantee fund that provides financial guarantees to companies that want to take on a loan and create an EPC project. The Energy Efficiency Fund signs a contract with ESCO company, this company signs a contract with the municipality of Kishinev, cash outflows are coming, Kishinev pays money back to the company, and ESCO settles in total with the fund."*

According to the speaker, it is important to create a guarantee fund: when a company signs a contract, school or kindergarten can not pay, this guarantee fund makes payments on behalf of the school, then the school is gradually making payments to the guarantee fund. Thus, the company is relieved of a financial pressure. It can quickly repay the obligation, and the school can ask for funds from the Fund for energy efficiency.

The representative from Moldova also overhauled the process of lending*: "The Energy Efficiency Fund is obliged to give up to 3 times loans more under 900 thousand dollars(our Guarantee Fund). If we lose 900 thousand dollars and pay these guarantees, then the rest of the project fund has to bring to the end at its own risk.*

For each loan, the guarantee is reduced by the amount of loan repayments. As for the loan, no more than 500 thousand dollars is paid for each building + 3% of the local currency (although the average rate is 10%). Each contract will have a grant component no more than 25% in proportion to the amount of the loan taken. "

Concerning the results, the speaker noted that he was able to overcome all barriers from a legal point of view, to do analysis of administrative barriers, conduct studies, and co-operate with heat suppliers. The main barriers are the lack of understanding of the ESCO mechanism on the part of local authorities, procurements problems, human factor.

At the end of his presentation, **Nicolae Zaharia** said: *"We are ready to share experience of the project. In Ukraine, this project is needed right now with the participation of all parties, and it is also necessary to identify barriers and overcome them."*

Natalia Unuchko, Head of the Economic Department of Bucha City Council, underlined the necessity of further conferences making a focus on the practical aspects of project implementation in the context of local government bodies.

"We ask you to invite us to the following events, where practical implementation of the project will be explained so that our city could prepare itself. Bucha is ready to co-finance projects. The budget of the city is significant, but we are not able to overcome all expenses on our own. We will be glad to implement one of the pilot projects in Bucha. "

Sergii Varga, Project Manager of Energy Efficiency in Public Buildings replied that the project organizers would like to realize one of the pilots in Bucha. *"Bucha is a wonderful city, it has an active mayor, lots of changes take place in the city, there is a large park."*

Ivan Varga, a strategic expert, made a proposal to change the project name: *"Instead of "overcoming the barriers" there should be used "defining and developing recommendations for overcoming the barriers. "*

Ivan Varga noted that there are many barriers and obstacles, as everywhere in Ukraine. The main problem is our attitude to business and budget money.

"Ukrainian legislation is one of the most complicated in the world for the management of public funds. The main problem is the transparency of the use of funds and overcoming all instances like the Treasury, the Ministry of Finance. "

Ivan Varga hopes that there will be more projects like this and that more business people will appear in this sphere.

CONCLUISONS AND RECOMMENDATIONS

It can be stated that the Inception Workshop was held at a high level and significant response has been achieved. A lot of comments, recommendations and the confirmation of the willingness of active participation in the Project has been received on and after the workshop from the participants who were not able to attend the event due to objective reasons.

Participants repeatedly emphasized that they welcome such a format of event which has the focus on free discussion and respects the views of all participants.

Thus, the following suggestions and changes are proposed as an outcome of Inception Workshop.

Issue	Suggestion	Expected Result
The cost of credit resources ESCO company, regardless of the form of co-operation is carrying a high risks and therefore, from the financial and banking sector side it makes it more "expensive", i.e. the interest rate will be higher than for a similar loan to the municipality.	For small renovations the ESCO Company will act as a borrower as it has the advantage - the flexibility and speed For large projects with long payback periods it should be considered a city, as a borrower	The possibility of ESCO company acting as an agent carrying a guarantee of achieving energy savings and the level of energy efficiency, provided that the main investor / donor will be the city and / or an outside investor such as a fund international financial institutions, sponsors
National implementing partner The project document identifies as national implementing partner the Ministry of Regional Development. At the same time, during the Inception Workshop, many stakeholders have expressed a desire to participate actively in	To expand the Project opportunities for cooperation with all interested parties, and given the current economic and political situation in the Country, it is recommended to initiate a change of modality to Direct implementation and conduct an analysis of	More successful operational activities of the Project, compliance with the intermediate and final goals and Ukraine needs.

the Project as partners. In addition to the already defined in the project document entities, such as the Ministry of Education, Ministry of Health, State Energy Efficiency Agency, other state and local authorities, non-governmental organizations expressed their willingness to cooperate actively with the project: Association of Small Towns, Association of Energy Efficient Cities of Ukraine, Ministry of Justice, Ministry of Finance, Ministry of Economy. At the same time, NIM modality of the project and the limited capacity of the operational management of the project can reduce the chances of success of the project.	the possibility of changing the implementing partner, or the introduction into the Project Board representatives from municipalities and other governmental authorities .	
EMIS Currently, implementation of even the simplest system of energy management and energy monitoring in cities of Ukraine proved to be effective in terms of reducing energy consumption and attracting the	1. Cooperation with other international organizations active in this area: GIZ, USAID to coordinate actions 2. Creation and support of the system with the involvement of the NGO supported with capacity building of state structures to	1. Institutional capacities are developed 2. he system is implemented and makes a difference 3. Improving the usability of the system, reduce the cost of its maintenance, to

attention of potential investors in energy efficiency. Currently, the city authorities is free to decide on the implementation of this systems, and there are many providers of such services, as well as the software of their own development. The possibility of integrating these disparate systems into a single national database requires additional efforts both from software and the organizational - legal sides. At the same time, there is doubts in the needs and willingness of state authorities to take control and maintain a national EMIS system	prepare them for the subsequent transfer of the finished national system. 3. Comparison of existing systems and system that was developed by UNDP. Adaptation of EMIS to the national conditions and the needs of Ukraine taking into account the current realities and future requirements, in accordance with EU recommendations (development of distributed generation, smart systems, on-line data gathering) 4. Explore the possibility of monetization the national EMIS system to make it more attractive for the stakeholders municipalities, businesses, potential investors to ensure its sustainability.	achieve compliance with current and future needs of the country.
The financial support mechanism. UNDP Project "Biomass" in cooperation with WB and IFC has made significant progress in developing a financial support mechanism for Ukrainian municipalities.	1. Consider participating ESCO companies, both municipal and private in projects to improve the energy efficiency of buildings with already developed financial support mechanism, under which the	1. Adaptability of the financial support mechanism 2. Reducing the cost of borrowed capital

	borrower may be a city or one of the municipal structures. 2. Consider the possibility of participation of other Ukrainian banks in this or a similar mechanism of financial support.	
Regulatory restrictions According to the current legislation of Ukraine, the ESCO contract is defined as the tax and legal category of “Service”, although it is more like an investment supported with delivery and installation of equipment. Thus, despite the presence of long-term contractual obligations to implement the EPC contract, tenders will be performed by the municipality only if they fund in the budget for services as it is provided by the Budget Code. There is a risk of non-fulfillment of obligations under the contract in the case of change of state authorities or the lack of support of deputies in future periods. This situation increases the risk of ESCO	1. Conduct legal research 2. Initiate changes in the legislation governing the specific characteristics of ESCO contracts	Reduce risks and increase the investment attractiveness of ESCO projects.

investments, and is one of the significant barriers. Also, this provision imposes certain restrictions from contracting side to the ESCO companies.		
PPP The main objective of the Project is to eliminate barriers for private capital investments in energy efficiency and reduce energy consumption of public buildings in the Country. In this sense, the ESCO modality is one of the special cases of public - private partnership, which has its advantages as well as significant limitations associated with the peculiarities of national legislation.	1. Conduct an analysis of the existing legislation governing the activities of ESCO companies and opportunities provided in the case of the use of the different modality of public - private partnership, regulated by separate legislation Ukraine 2. Expand the list of instruments allowed for the use of Project to improve energy efficiency and reduce the energy consumption of public buildings in the country	1. Greater flexibility in achieving the end result of the Project 2. Empower the repeatability of possible solutions.
Municipal ESCO During the discussion, representatives of some cities of Ukraine expressed their interest in the organization of the municipal ESCO company. Such an approach may have certain advantages compared to private companies regarding the attraction of credit	1. Investigate the benefits of creating a Municipal ESCO companies by conducting economic, financial and legal analysis 2. To develop the set of template documents: statutes, contracts, projects, decisions of sessions of the City Council of Deputies	1. A new form of attracting investment in energy efficiency is created 2. Dissemination of positive experience and replication

resources, investment and donor support on concessional terms, while at the same time have a greater management and efficiency challenges.	3. Conduct a pilot project with the participation of the municipal ESCO company. 4. Distribute the results among Ukrainian cities.	
Energy suppliers like ESCO In world practice, in particular in the EU the provision of ESCO services by energy supplying organizations is becoming more frequent. For energy companies, this is the diversification of the business, the opportunity to modernize production and reduce costs, to achieve the requirements to reduce energy consumption. Such companies have a significant advantage due to the presence of direct access to the consumers of energy resources.	1. Explore the possibility of cooperation with existing companies - energy suppliers 2. Conduct the study of international experience in this field 3. Provision of expert support 4. Organization of pilot projects involving participation of energy supply organizations 5. Development of recommendations and dissemination of experience	1.Introducing of energy efficiency measures in the generation, distribution networks 2. Additional features are achieved by the end of the Project
Leasing tool Unlike ESCO contracts that under existing legislation fall into the category "Service", the leasing instrument is classified as debt obligations, a binding, regardless of the decision of the City	1. Explore the possibility of organizing a leasing facility in co-operation with domestic and foreign manufacturers of energy efficient equipment.	A new form of support ESCO projects is made.

Council, so that is more secure from the investor point of view. leasing tool could also enhance the ability of ESCO companies for the purchase of high-quality energy-efficient equipment (individual heating units, boilers, heat exchanger, etc.)		
Risk insurance The presence of significant economic, financial and political risks is a significant limiting factor in the business in Ukraine, including the ESCO market, which leads to a decrease in investment, focusing on relatively simple projects with a short payback period	1. Investigate the possibility of insurance ESCO contracts from failure to reach economy, non-payment of premium and non-fulfillment of obligations of the contractor 2. Explore the international experience in ESCO risk management	1. Lowering the risk in ESCO market 2. Increase in investments 3. Increasing the share of medium - and long-term modernization projects
Municipal Fund ITS Energy Efficiency Fund, created in Ukraine in 2017 year, now provides loans to OSBBs only. At the same time the process of decentralization going on in Ukraine, resulting in additional revenues of municipalities and the presence of new specific financial opportunities in the cities. The creation of regional or municipal energy efficiency fund	1. To investigate the economic feasibility and the legal possibility of establishing of municipal funds. 2. Explore the tools to attract financing including bank loans, green bonds. 2.Develope the recommendations and template documents and regulatory legal acts to establish a Fund at the municipal and regional levels.	1. Creation of a tool to attract investment in energy efficiency in the country's cities

would be an effective tool to encourage investment in energy-efficient modernization of public buildings, with the involvement of city funds, credit resources, donor, green bonds, and bring ESCO companies on mutually beneficial terms.	3. Provide technical and legal support to municipalities to create municipal energy efficiency fund 4. Dissemination of results	