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України



The mechanisms of financing energy efficiency projects in Ukraine

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1. Summary

Financing of energy efficiency projects in Ukraine is still in its development, especially as regards seeking and introducing relevant mechanisms for the modernisation of residential and public buildings. The energy modernisation of residential and public buildings has a potential for over 50% reduction in energy consumption with respectively larger investment needs. However, the greater part of the financing for energy efficiency projects provided by international financial organisations and donors (over 80%) is available for projects to modernise thermal energy supply systems. As a result, there is a significant discrepancy between available and needed financing for energy efficiency projects.

Diagram 1.1. Demand for and supply of financial resources for modernising the thermal energy supply and consumption



Source: consultants' analysis

The situation was enabled by the lack of coordination between all market players (the state and local authorities, donors and investors), imperfect legislation, and a relative ease of funding energy producers as compared with energy consumers.

Energy efficiency investment programmes should be financed in close cooperation with the state and local authorities.

Table 1.1. The role of the authorities in financing energy efficiency (EE) projects

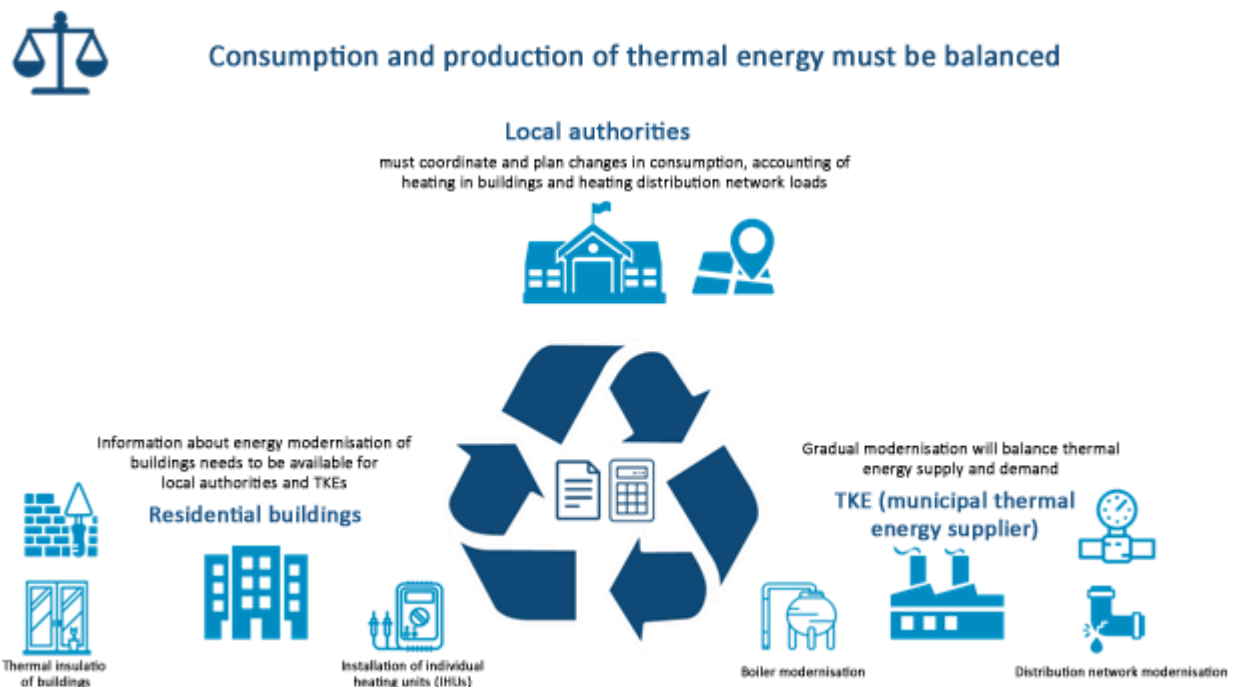
State authorities	Local authorities
<ul style="list-style-type: none"> • Create legislation to attract investments • Attract financing from IFOs (international financial organisations) and determine the terms and conditions of its use • Introduce state programmes for financing and supporting energy efficiency programmes 	<ul style="list-style-type: none"> • May act as partners of existing EE programmes or develop their own ones to be funded from local budgets • Local authorities have better understanding of the priorities of energy modernisation "on site and may attract funds for such projects • Local authorities monitor the implementation

- Provide informational and technical support for local authorities and other loan recipients
- Provide state guarantees for procured financing
- Provide municipal guaranties for procured financing

Source: consultants' analysis

In the last years the consumption of thermal energy went down by at least 30%. However, if there are no new investments in thermal energy production and the replacement of thermal energy distribution networks, there might be technical problems with central heating.

Diagram 1.2. The diagram of the effective coordination of the energy efficiency projects implementation



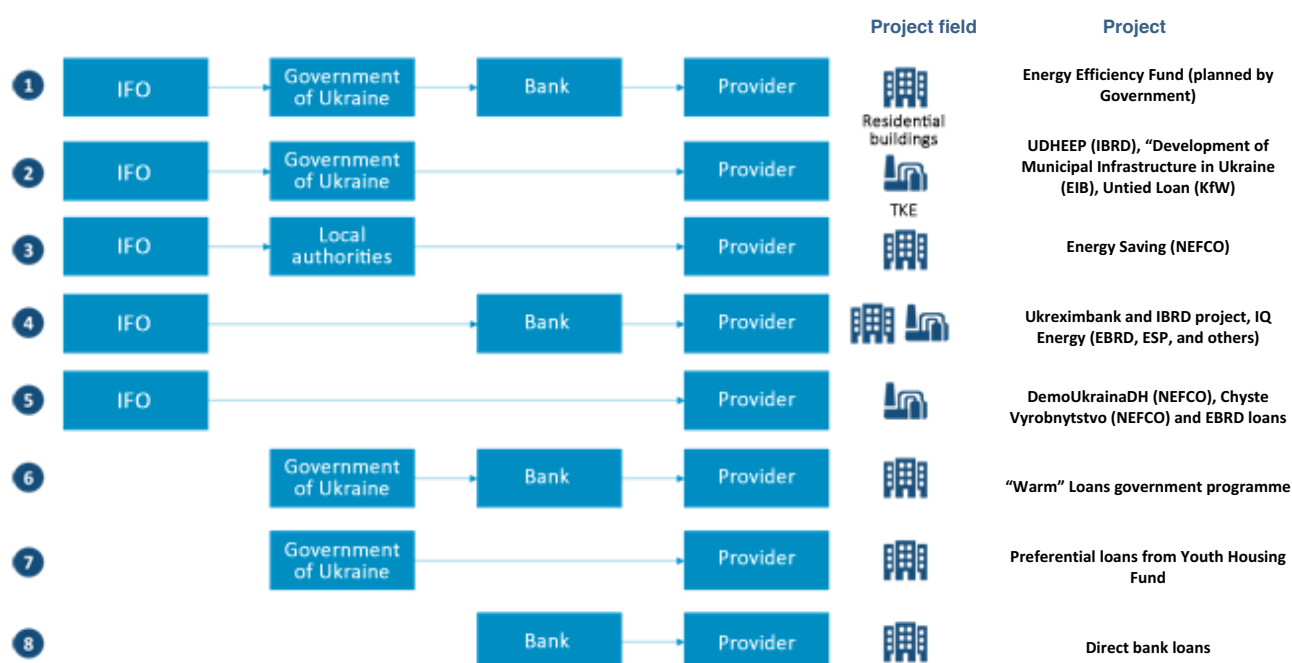
* For each region (city, district etc.) separately

Source: consultants' analysis

2. Analysis of the existing mechanisms for energy efficiency project financing

There are several mechanisms in Ukraine for providing loans to improve energy efficiency differing, in particular, by their sources and the number of players involved in the process from the provision of funds by the lender to their application. Most programmes are financed by donors and IFOs. Unfortunately, the amount of drawdown is not high for the most part.

Diagram 2.1. The existing schemes for financing energy efficiency projects in Ukraine



Source: consultants' analysis

Table 2.1. The strengths and weaknesses of the existing project funding schemes

Mechanism	Strengths	Weaknesses
1.	Overall orientation for asset renewal, possibility to obtain funds from IFOs	More complicated management mechanism requiring relevant legal framework
2.	Possibility to obtain large funds allocating them for top-priority goals	Overregulated procedures, extend the process of obtaining to several years.
3.	Municipal authorities determine the most effective projects for the municipal budget	Municipal authorities mostly have no incentives to implement EE measures in the housing sector
4.	IFOs use an extensive network of banks and other resources to find projects	Loan interest rates increase because of bank margin
5.	Possibility for TKEs to get large loans with relatively low interest rates, minimum number of participants in the process	Some companies cannot get loans because of their high minimum threshold
6.	Relatively simple management and	Spot financing results in lower

	convenience for the state authorities	effectiveness
7.	The State can provide loans with low interest rates	Additional expenses of resources, limited budget
8.	Established communications between banks and potential customers	High interest rates because of macroeconomic instability

Source: consultants' analysis



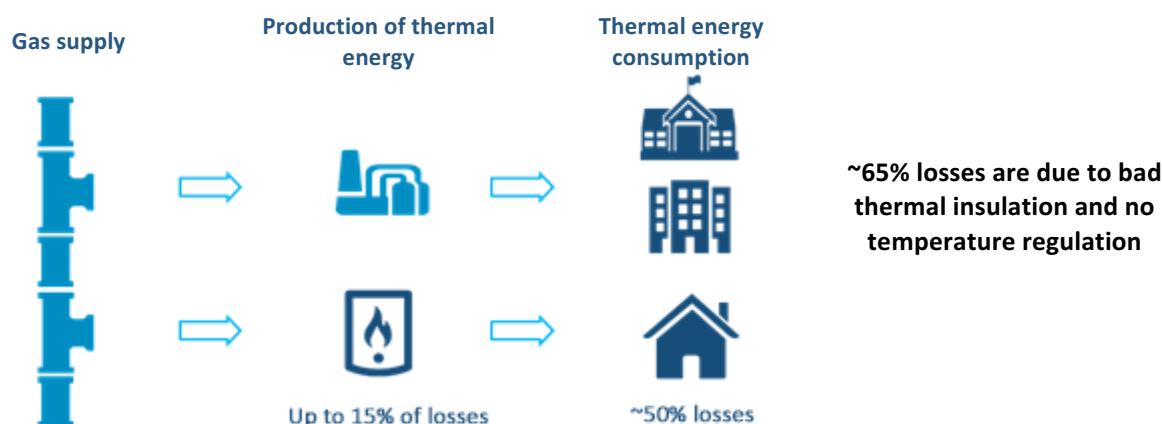
3. Financing of projects for the energy modernisation of buildings in Ukraine

Demand for tools to improve energy efficiency in the housing and public sectors greatly increased in the last years, so programmes were started in Ukraine to support the financing of such projects. However, their budgets are quite limited and amount to about USD 200 million, with the total amount of required investments being about USD 51 billion.

3.1. Substantiation for required investments, investment needs and sources of financing

Residential and public buildings, constructed in Ukraine during the Soviet time, for the most part were not designed to be energy-efficient. In the last 25 years there were no extensive renovation programmes in Ukraine to improve the energy efficiency of residential and public buildings, as a result about 65% of natural gas used to produce thermal energy is wasted because of the low energy efficiency. With the current price of imported natural gas (~ USD 200 at the NCG gas hub in December 2016) the economic losses might be as great as ~ USD 1.8 billion annually.

Diagram 3.1. The estimate of the waste of natural gas used to produce thermal energy



Source: consultants' analysis

The housing sector is the largest consumer of thermal energy with ~ 65% of the total consumption. So, taking into account the condition of residential buildings and their number, detached houses and apartment buildings should be considered a priority for energy efficiency improvement.

Table 3.1. The estimate of investment needs for the energy modernisation of buildings

	Field	Investment required	Gas consumption reduction potential	Consumption reduction per USD 1 billion of investments
	Renovation of apartment buildings	USD 17 billion	2.3 billion m ³	135 million m ³
	Renovation of detached houses	USD 28 billion	4.7 billion m ³	168 million m ³
	Replacement of individual gas boilers for more efficient ones	USD 4 billion	1.7 billion m ³	425 million m ³
	Renovation of public buildings	USD 2 billion	0.3 billion m ³	150 million m ³
	Total	USD 51 billion	9.0 billion m³	

Source: data of the Ministry for Regional Development

To provide financial support to households in implementing energy efficiency projects by reimbursing partially project costs or loans there are about EUR 200 million of programme funds available, or less than

1% of the investment need (with the budgets of some programmes used for the partial reimbursement of project costs).

Diagram 3.2. Existing programmes for the financial support of households and municipalities in implementing energy efficiency projects



Source: consultants’ analysis

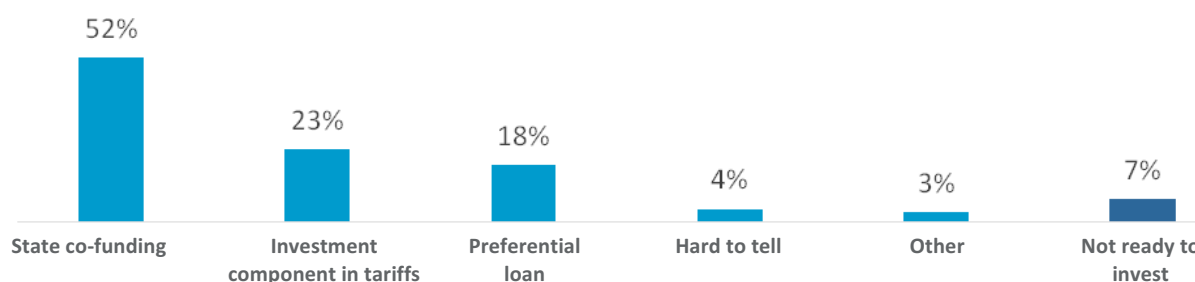
Existing programmes mainly support separate energy efficiency projects, however, it is possible to achieve significant energy savings only with all-inclusive renovation projects ensuring the effective use of energy resources during their consumption.

Top-priority measures to improve energy efficiency include the installation of thermal energy meters and individual heat supply units (IHSUs) making it possible to monitor the actual consumption of thermal energy and to adjust the temperature inside the building depending on weather conditions. At present 59% of buildings in Ukraine are equipped with thermal energy meters, and 3% have IHSUs installed (see Annex 1 for more details). Such measures require investments in the amount of about USD 60 million to get 100% of buildings equipped with thermal energy meters and more than USD 1 billion to install IHSUs.

According to the household surveys conducted under a World Bank project, 44% of respondents do not invest in energy efficiency because they do not have required means. Measures to improve energy efficiency in a detached house or an apartment block may cost from UAH 7,000 to UAH 100,000 per household (for an average habitable area of 50 m²), with an average wage in Ukraine being UAH 5,400 per month. So it is impossible to introduce comprehensive energy saving measures without providing support to households.

According to the results of the household survey conducted under the USAID project in 2014 Municipal Energy Reform, 89% of Ukrainians are ready to invest in energy efficiency. 81% of the respondents mentioned as their reasons for such investments the fact that it makes Ukraine less dependent on imported energy resources, 76%—reduction of utility payments.







Diagram 3.3. Survey results: On what conditions would you be ready to invest in improving the energy efficiency and environmental friendliness of your housing? (236 respondents in 5 cities)



Source: Preparation of Project Proposals on Sustainable Energy: Practical Manual / Edited by R. Yu. Tormosov, O. P. Romanyuk, K. R. Safiulina – K.: Polygraph Plus, Ltd, 2015. 176 p.: fig.






3.2. Comparison of the existing financing programmes

Table 3.2. The terms of the programmes for financing the energy modernisation of detached houses and apartments

 Respective programmes	Warm Loans	IQ Energy
 Interest rate	from 24.5%	30%
 Maximum amount, million UAH	UAH 50,000	UAH 150,000
 Term of repayment	max. 3 years	max. 4 years
 Grant	20–40%	15–20% (E5P grant)
 Note	Only for measures listed in the Resolution of the Cabinet of Ministers of Ukraine No. 1056	Only for products included in the IQ Energy online catalogue

Source: consultants' analysis

Table 3.3. Terms of the programmes for financing the energy modernisation of apartment buildings

 Respective programmes	EIB loans (for local self-government bodies) see section 3.3.6.	NEFCO Energy Saving (for local self-government bodies)	Loans from the Youth Housing Foundation	“Warm” Loans
 Interest rate	2.4–4% + EUR 50,000	3%	3%	from 20%
 Maximum amount	min. EUR 5 million (minimal)	EUR 400,000	-	UAH 10 million
 Term of repayment	22 years	max. 5 years	max. 10 years	max. 10 years
 Grace period	5 years	max. 6 months after project completion	3 months for interest rate and 1 year for principal	-

 Grant	from ESP Fund	from ESP Fund	-	from 40%
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Source: consultants' analysis

3.3. Information about the existing financing programmes

3.3.1. "Warm" Loans government programme

Government incentives to improve energy efficiency using banks have a quite significant potential for carrying out energy saving measures. At present the State partially reimburses loans taken to pay for respective materials and equipment under the "Warm" Loans government programme.



End user of loan	ACAB/ Condominium	Natural persons
Amount of loan	max. UAH 10 million	UAH 1,000–50,000
Term of loan	max. 10 years	max. 3 years
Annual interest rate	from 20%	24.5%
Fee	1.25%	3.00%
Grant	20–70%	20–35%

The programme was started in November 2014. After the completion of an energy efficiency project funded by a loan the household gets a reimbursement from the state budget. The amount of the reimbursement covers a part of the loan principal. Only loans used for specified energy efficiency measures are reimbursed.

Table 3.4. The terms of reimbursement of loans under the Warm Loans programme

Reimbursed loan principal, %	Loan used for
20% (max. UAH 12,000)	purchase of solid fuel boilers
35% (max. UAH 14,000)	purchase of EE materials and equipment by private persons and purchase of solid fuel boilers by recipients of utility payment subsidies
40% (max. UAH 14,000 per apartment)	purchase of EE materials and equipment by associations of co-owners of apartment buildings (ACABs) (except for households receiving subsidies for utility payments)
70% (max. UAH 14,000 per apartment)	purchase of EE materials and equipment by ACABs (only for households receiving utility payment subsidies)

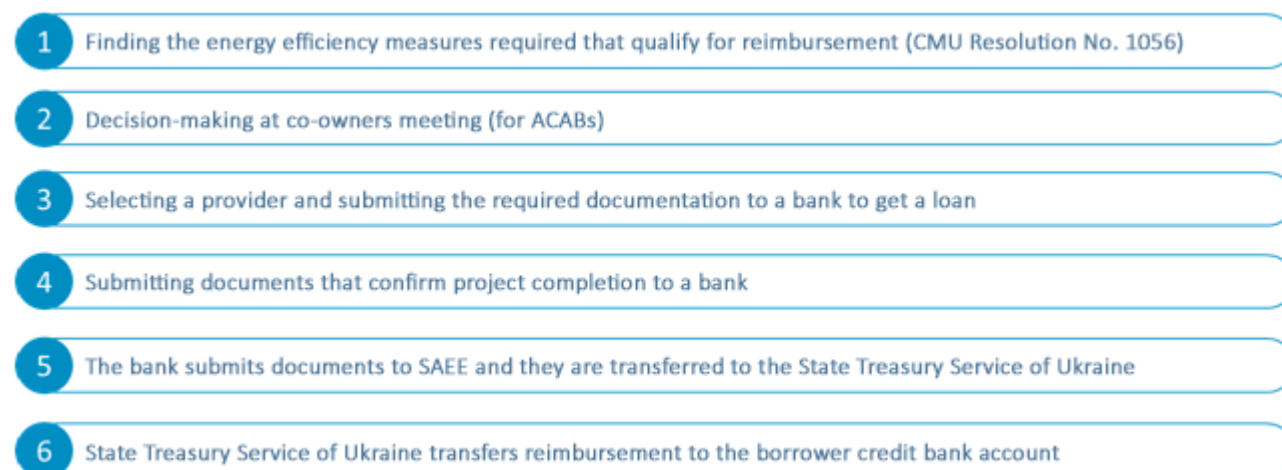
Source: Resolution of the Cabinet of Ministers of Ukraine No. 1056

At present four banks may provide "warm" loans: Ukreximbank, Oshchadbank, Urkgazbank and Privatbank.

There are certain criteria for ACABs to qualify for a loan:

- They must be registered for more than 3 months
- There must be a respective decision taken by the co-owners (at least by 75% of the votes according to the apartment area)
- No current unpaid balance
- Share of utility payments made by households in time exceeding 85%

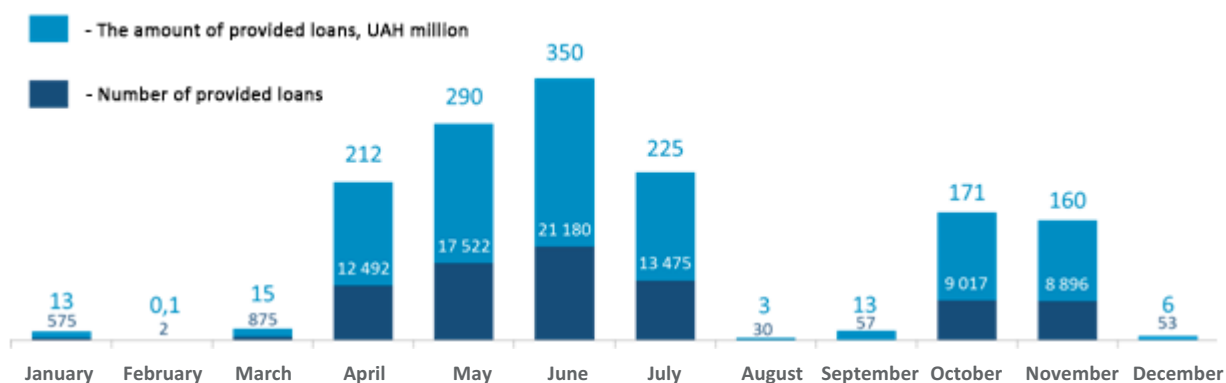
Diagram 3.4. Stages in receiving a reimbursement for a “warm” credit



Source: Oshchadbank, Ukgazbank

About 190,000 households received about UAH 2.7 billion worth of loans for improving energy efficiency in the last 2 years. In total 164,000 loans have been provided with the government reimbursing over UAH 1 billion. The average cost of a project is about UAH 18,000 for private persons and about UAH 120,000 for ACABs. The amount of loans provided to ACABs is 1.3% of the total amount of the provided loans.

Diagram 3.5. The number of loans provided under the “Warm” Loans programme in 2016



Source: SAEE data

The programme is focused on separate energy efficiency improvement projects, so it is relatively simple to administer. However, it does not provide for the evaluation and planning of its results regarding the saving of energy, and is not suitable for the implementation of comprehensive projects in apartment blocks.

Diagram 3.6. The financed EE improvement measures for households

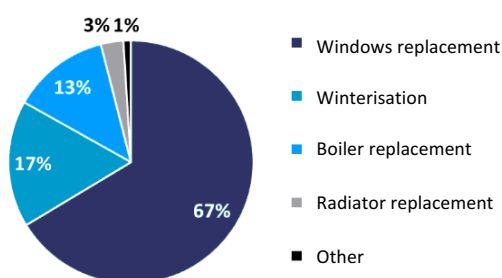
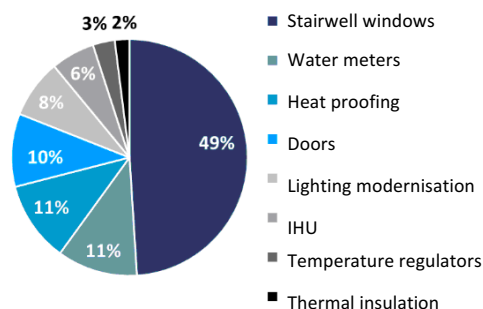


Diagram 3.7. The financed EE improvement measures for ACABs






Source: data of the SAEF as of November 12, 2015

Source: data of the SAEF as of November 12, 2015

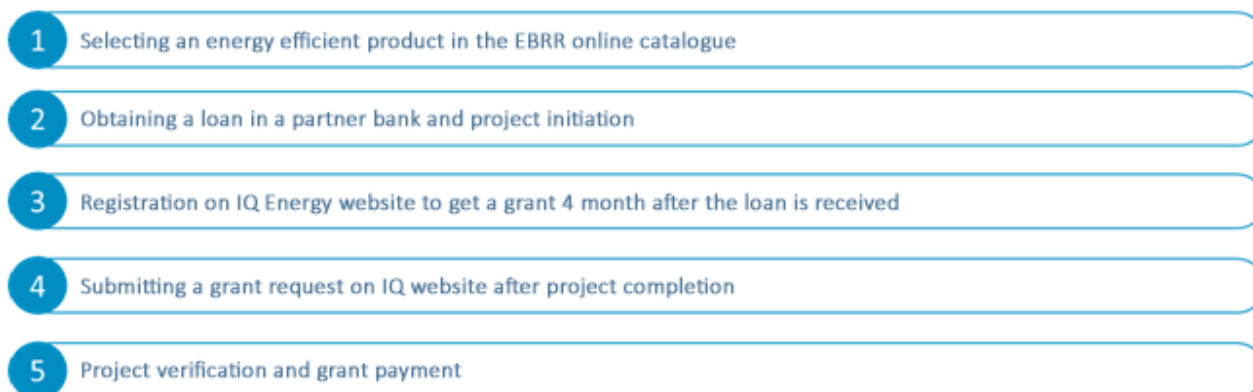
3.3.2. The EBRD IQ Energy programme

IQ Energy is a programme implemented by international organisations in Ukraine. It was started in 2016 under the management of the EBRD. Funds are distributed through bank institutions.

  	End user of loan	Private household
	Amount of loan	max. UAH 150,000
	Annual interest rate	30%
	Grant	15% and 20%

Under this programme households living in apartments or detached houses may obtain loans and grants for improving their energy efficiency. The budget of the programme until 2020 amounts to EUR 90 million, including EUR 75 million from the EBRD for provision of loans and EUR 15 million from the E5P Fund for provision of grants. The Ukrainian banks Uksribbank, Raiffeisen Bank Aval and OTP Bank are the distributors of the EBRD funds. The necessary requirement for obtaining a loan is its use for purchasing energy-efficient equipment from the online Catalogue of Technologies¹.

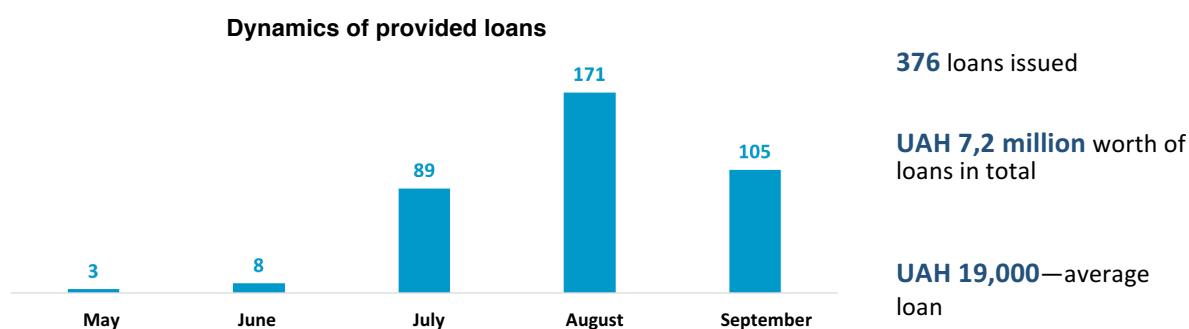
Diagram 3.8. Stages in receiving loans and grants under the IQ Energy programme



Source: consultants' analysis, data of IQ Energy

10% of all completed projects are verified on site, other 90%—by photographs. This approach minimises the number of frauds and does not require significant administrative expenses.

Diagram 3.9. The outcomes of the programme as of September 19, 2016



¹ www.iqenergy.org.ua/technologies

Source: IQ Energy

3.3.3. The NEFCO energy efficiency programme

Municipalities in Ukraine may initiate energy saving programmes and obtain funds for their implementation at their own discretion. Respective loan agreements are concluded directly between IFOs and municipal authorities, with loan funds transferred to loan recipient’s account in a local bank. In particular, this EE project funding scheme is used in the NEFCO energy efficiency programme.

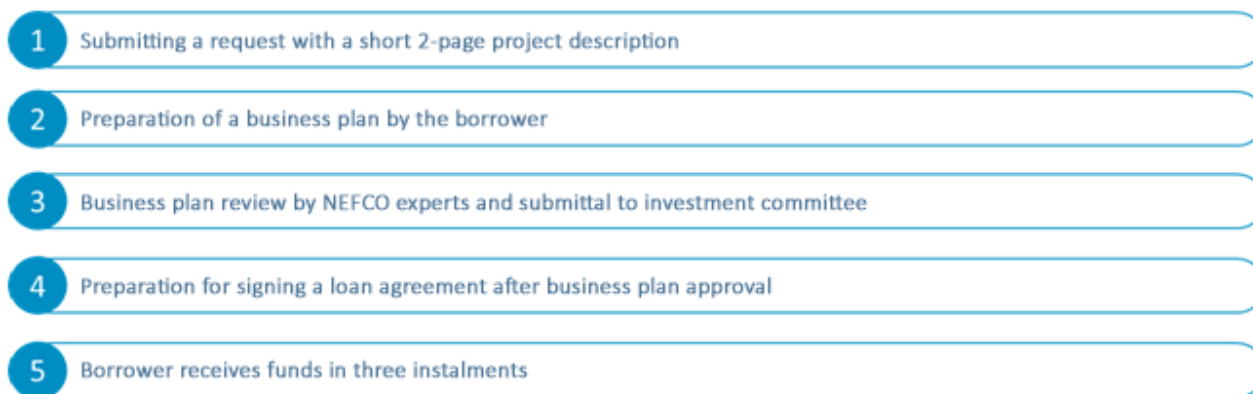


End user of loan	Municipality
Amount of loan	max. EUR 400,000
Annual interest rate	3%
Grace period	max. 6 months after project completion
NEFCO’s share in project funds	max. 90%

The aim of the programme is to improve the thermal energy efficiency of buildings of state or communal ownership. Typical measures to improve energy efficiency under the project are the modernisation of individual heating systems, installation of heating regulators, replacement of doors and windows etc. Loans are provided in condition that respective projects ensure energy cost savings of about 25% of the investments and are environmentally friendly. An energy audit of the building is necessary for project approval.

The whole procedure from submitting a request for a loan to obtaining it takes about 6 months.

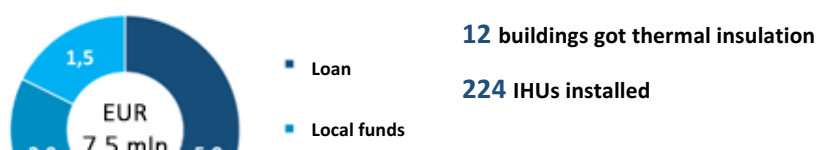
Diagram 3.10. The stages in obtaining funding under the NEFCO programme



Source: data of NEFCO

NEFCO projects to improve the energy efficiency of public buildings have been carried out in 6 Ukrainian cities.

Diagram 3.11. Energy efficiency projects for public buildings in Kyiv (2013)





Grant

33 institutions underwent lighting modernisation

~ UAH 30 million of annual savings

5-year year payback period

Source: data of NEFCO

3.3.4. Preferential loans from the State Fund for Supporting Youth Housing Construction

The Government also seeks to support housing renovation projects, including measures to improve energy efficiency. The programme started by the State Fund for Supporting Youth Housing Construction is an example of a programme under which direct loans from the Government are provided. The Fund is a specialised financial institution that may provide preferential loans to legal entities (such as energy service companies (ESCOs)) and ACABs under the programme in accordance with its approved budget.

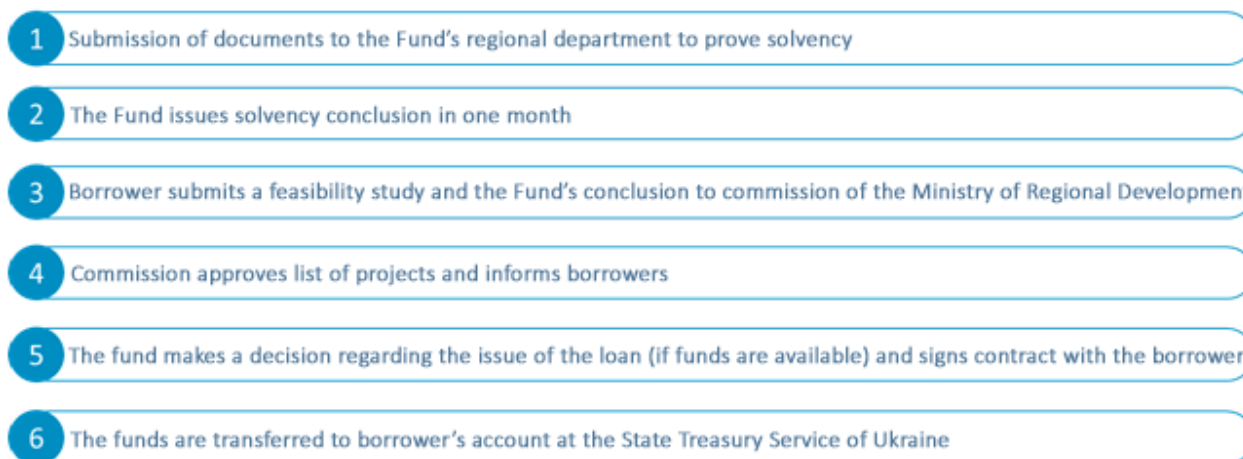


End user of loan	ACAB or other legal entity
Term of loan	max. 10 years
Annual interest rate	3%
Grace period for interest payments	3 months
Grace period for interest payments	1 year

The programme for providing preferential loans to legal entities, including associations of co-owners of apartment buildings (ACABs), was started in 2012. Preferential loans are provided through the regional departments of the Fund without the participation of commercial banks. The aim of the loan provision programme is to fund minor and basic repairs of residential buildings, including energy modernisation.

Main criteria for approving projects are: improvements in energy efficiency and implementation of the project in several residential buildings using the same utility system.

Diagram 3.12. Stages in the provision of loans from the State Fund for Supporting Youth Housing Construction



Source: Regulations on Provision of Preferential Loans in Housing and Public Utilities Sector from the State Budget

3.3.5. Programmes of commercial banks

Bank loans are a promising instrument for funding energy saving measures, although they are not used widely in Ukraine at present. Banks are very slow with the development of special loan products for improving energy efficiency. The existing interest rates in the market are very high and no reimbursement for interest payments are provided, so bank loans cannot compete with special energy efficiency funding programmes, such as “Warm” Loans, IQ Energy and others.

Commercial banks in Ukraine have almost no programmes of their own for funding energy saving projects. Three banks were chosen for the study: Metabank, Kredobank and Bank Lviv.

Table 3.5. Terms of bank loans for energy efficiency projects

	Metabank	Kredobank	Bank Lviv	Bank Lviv
Loan recipient	ACAB	ACAB	ACAB	Natural persons
Interest rate	0.001%	19%	24%	approximately 25%
Fee	1.17% monthly	1% one-time payment	1% one-time payment	1.5% one-time payment 0.6% monthly
Loan amount	max. 60% of average monthly income	max. UAH 5 million	max. UAH 1 million	45,000 or more (depending on project)
The term of loan	max. 5 years	max. 10 years	max. 5 years	max. 3 years
Collateral	Not required	Not required	Rights to receive income	Mortgage of purchased equipment

Source: Metabank, Kredobank, Bank Lviv

In addition, Bank Lviv is a partner of local programmes encouraging energy efficiency measures. The local programmes implemented in Lviv Region and in two cities in Ivano-Frankivsk Region (Drohobych and Novoiavorivsk) get an additional reimbursement of interest payments to the amount of 10–20% of annual interest rate.

The main requirement for an ACAB requesting a loan is that the meeting of its co-owners passes a respective resolution (with more than 75% of votes proportional to the apartment area) (for further details see section 5.6).

Table 3.6. Main criteria for obtaining a loan by ACABs

	Metabank	Kredobank	Bank Lviv
Period since ACAB registration	over 6 months	over 6 months	over 6 months
Amount of timely utility payments	over 95%	over 85%	max. 20% of association members with arrears
Other	switching to the bank for other banking services	–	–

Source: Metabank, Kredobank, Bank Lviv

3.3.6. Programmes of local authorities

To introduce energy efficiency projects local authorities may provide additional funds from their own budgets. Such funds may be provided through participation in various government programmes (such as “Warm” Loans) or allocated for energy saving projects directly from the budget. Municipalities also may mobilise external investments from IFOs with guarantees of the state or other lenders.

By the end of 2016 216 local programmes were established in Ukraine for additional support of the “Warm” Loans programme. Additionally 15–30% of the principal of loans received by ACABs and/or private households are reimbursed from local budgets of different levels. The total budget of such programmes in 2016 was UAH 73 million with the total amount of reimbursements of UAH 46 million for 38,400 households. The total budget of the local programmes in 2017 is UAH 71 million.

Table 3.7. The local programmes supporting “Warm” Loans

	Regional level	City/town level	District level
Budget Approved	20	40	49
No Budget	4	73	30
Total	24 out of 24	113 out of 407*	79 out of 473

* with population over 2.5 thousand; not taking into account Crimea or the territory of ATO (anti-terrorist operation)

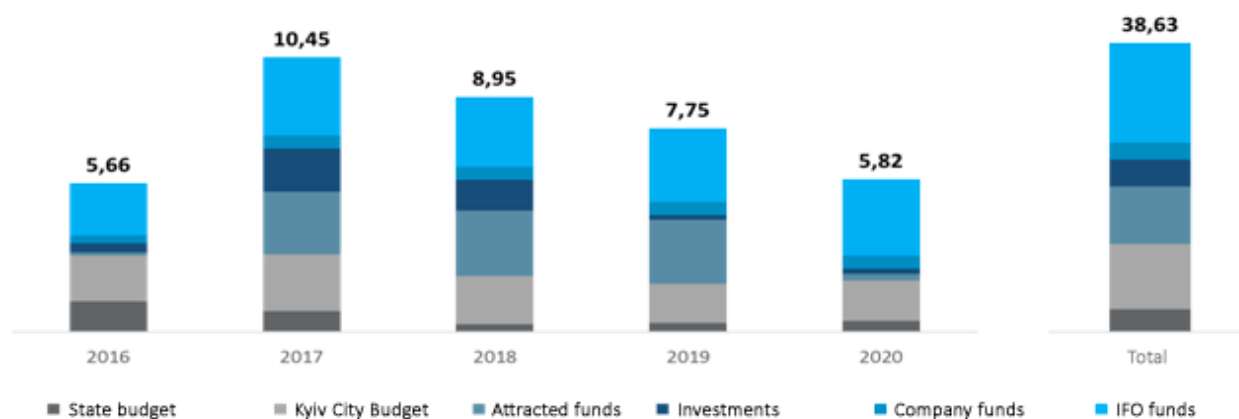
Source: SAEЕ data

Also there are some separate local programmes for improving energy efficiency, for example, the cities of Rivne, Vinnitsia and Kyiv have such programmes approved until 2019–2020. Funds under these programmes are used for insulating residential and public buildings, improving central heating systems, installing thermal energy meters etc.

The programme in Kyiv

The programme for funding housing and utility services and improving energy efficiency in 2016-2020 in Kyiv is the largest among such local programmes. Its budget for five years amounts to UAH 38.6 billion. It will be used for implementing projects to improve the quality and energy efficiency of all communal services.

Diagram 3.13. The budget of the programme to improve energy efficiency and to develop housing and communal services in Kyiv



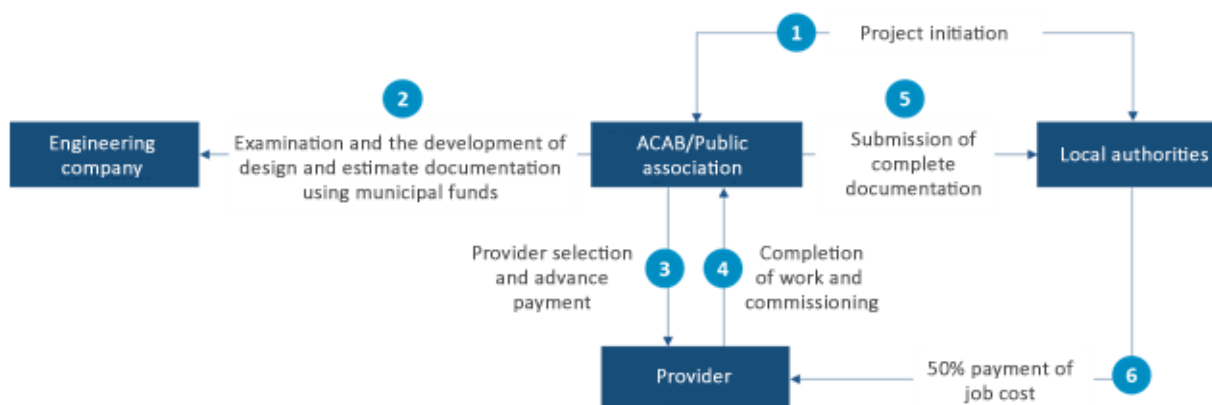
Source: Resolution of Kyiv City Council No. 232/232

It is planned to implement 109 projects in construction and modernisation of thermal energy distribution networks, to conduct annual repairs of 595 buildings, to improve thermal insulation of 20 public buildings, and to modernise over 45 thermal energy production facilities, improving their energy efficiency under this programme. Also the programme provides financial support encouraging households to improve their energy efficiency and provides funds for joint financing of ACAB projects. In 2017 over UAH 1 billion is planned in the programme budget for the implementation of energy efficiency projects (about 10% of the total budget for 2017).

The programme in Rivne

The programme provides financial support for energy efficiency projects in Rivne initiated by ACABs or their associations. 50% of funds are provided from the local budget with the other 50% provided by ACABs.

Diagram 3.14. The scheme of the joint funding of projects to install thermal energy meters, individual heating units (IHUs) and to fulfil other measures for improving energy efficiency using funds from the local authorities and ACABs in Rivne

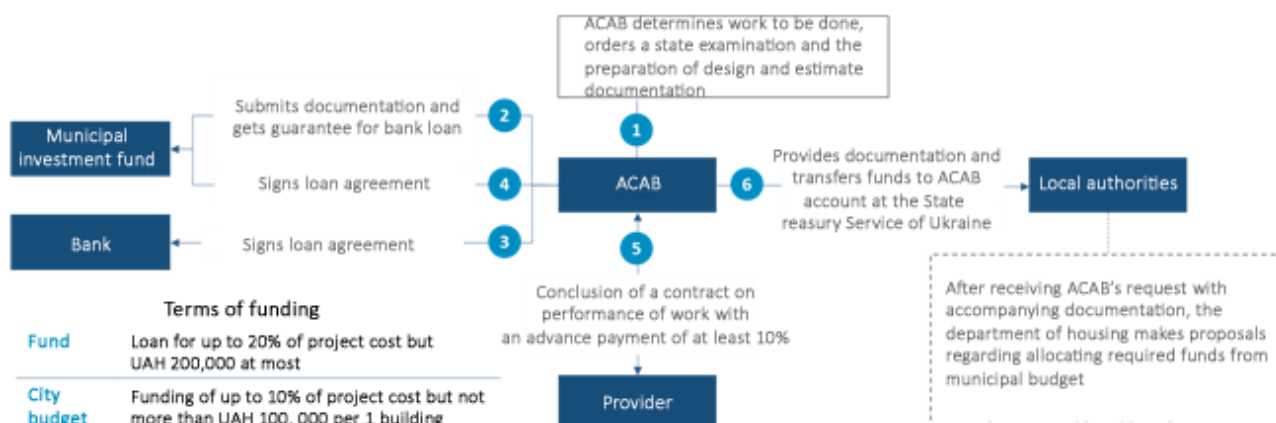


Source: The procedures for the implementation of the programmes “Equipping apartment blocks in Rivne with thermal energy and water meters in 2014–2017” and “Improving the thermal insulation of the residential buildings owned by Rivne City Council in 2015–2019”

The programme in Vinnytsia

In addition to providing joint co-funding for energy efficiency projects, the local programme in Vinnytsia provides loans for the implementation of such projects.

Diagram 3.15. The scheme of the joint funding of energy efficiency projects by the local authorities and ACABs in Vinnytsia



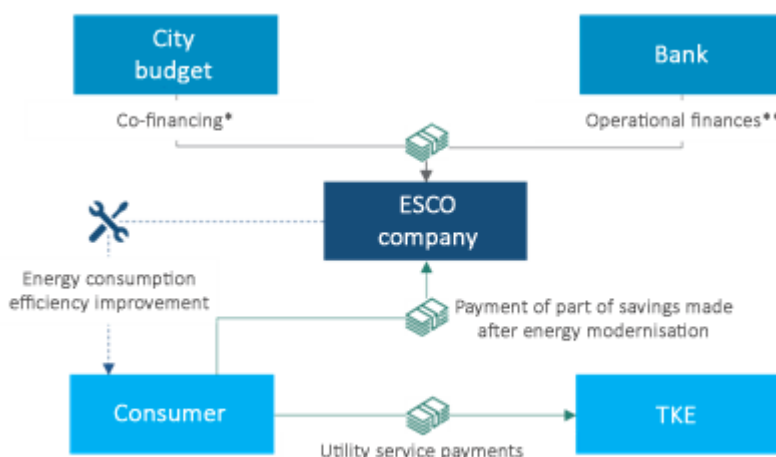
*items 2–4 are optional to be used if ACAB requires a loan

Source: Resolution of Vinnytsia City Council No. 897 dd. 31.08.2012

3.3.7. The ESCO contract mechanism

The mechanism for carrying out energy efficiency improvement projects using contracts with energy service companies (ESCO) is a new one for Ukraine. This mechanism allows the customer to implement energy saving measures normally without making any investments of its own. Any consumer of energy may use the ESCO mechanism, including households, ACABs, enterprises, state-financed organisations or local authorities. Relations between the consumer of energy and an ESCO company are regulated by an energy service contract, in accordance with which the company carries out energy efficiency improvements using its own funds. As a result of savings in energy consumption the consumer is able to repay the investments with a specified company’s profit during the term of the contract.

Diagram 3.16. The ESCO mechanism for carrying out EE projects



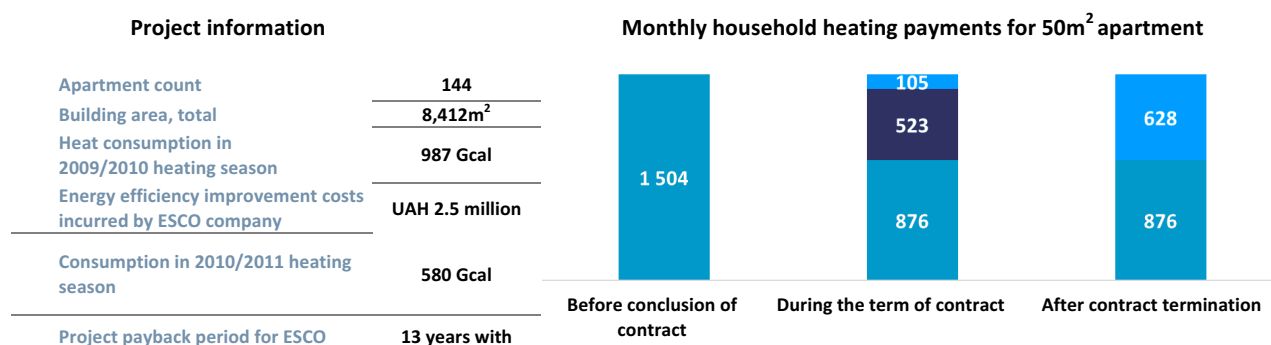
* the project may be funded partially from the state budget or by other interested parties

** if required, funds from banks or other financial institutions may be mobilised

Source: consultants’ analysis

This mechanism establishes mutually advantageous relations between the company and the consumer, as the company gets its profits for provided services, and the consumer pays less for utilities without making any initial investments—up to 20% during the term of the ESCO contract and up to 70% after its completion (full recovery of its investments by the company). As per the Law of Ukraine, the duration of an energy service contract may not exceed 10 years, however, usually the payback period for such projects is 5–7 years. After the recovery of its investments and profit by the ESCO company the contract is terminated, and all respective equipment and materials become the property of the consumer.

Diagram 3.17. An example of the energy modernisation of a residential building carried out using an ESCO contract (Lutsk, 2010)



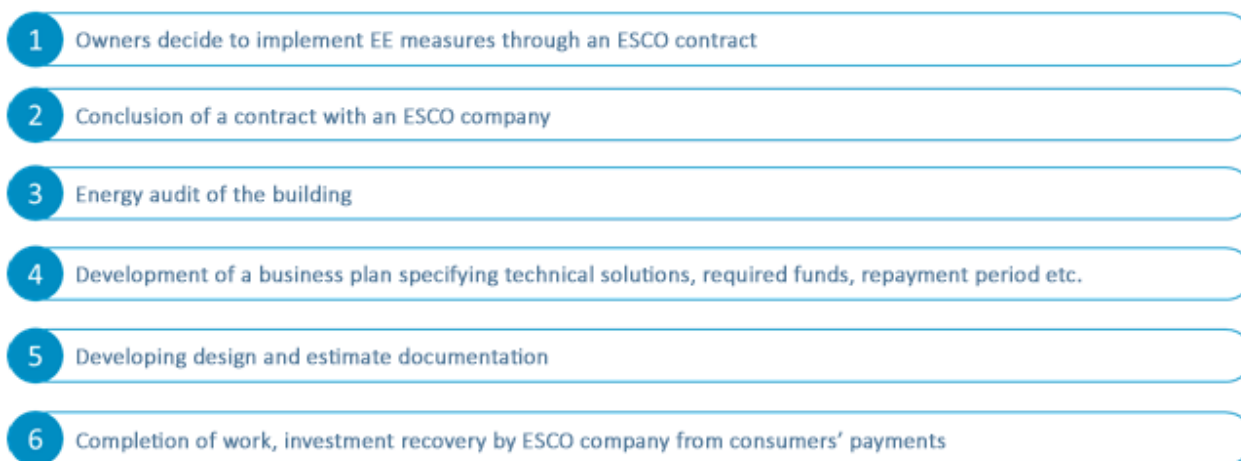
company (calculated duration of contract) 2011 rates, 4 years with 2017 rates ■ - Heating payment ■ - Payment to ESCO company ■ - Consumer's savings

* recalculated for the current charge rate for thermal energy of the year 2010 (UAH 1338 as of January 2017)

Source: Lutski Komunalni Systemy Energy Service Company

The amount of payment to the ESCO company is calculated as a percentage share of energy cost savings, so metering equipment is necessary for making payments. If not available, such equipment is installed in the beginning of the project.

Diagram 3.18. The stages in the implementation of a project using the ESCO contract mechanism



Source: consultants' analysis

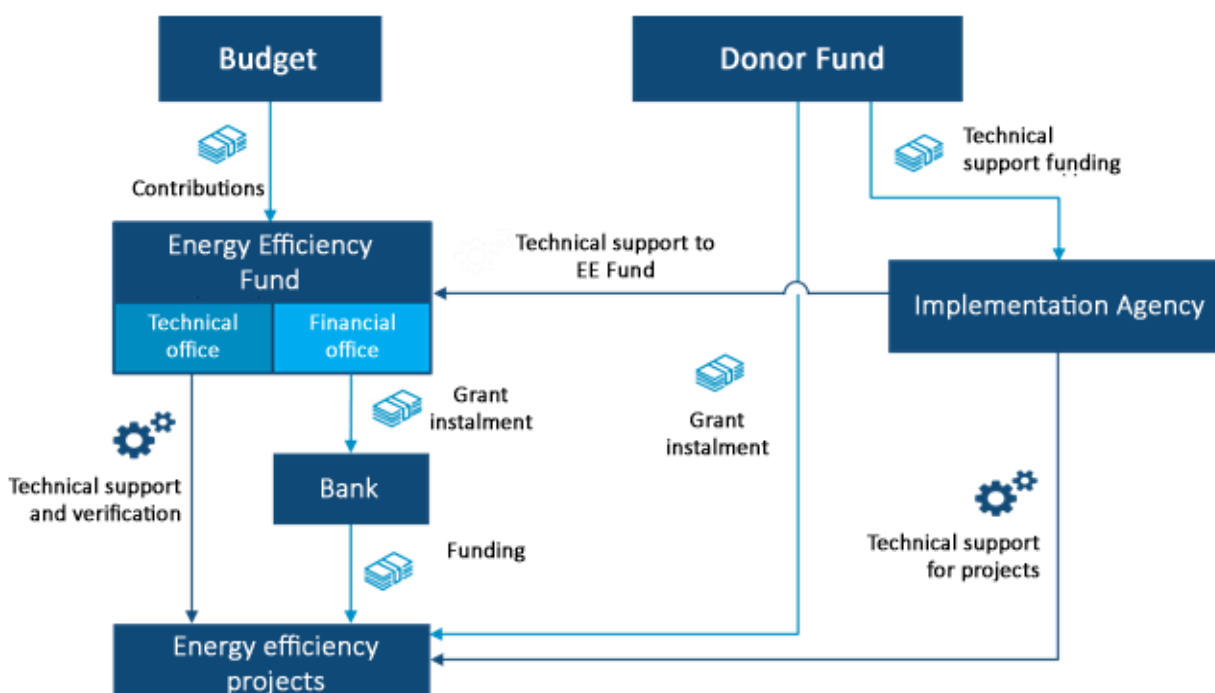
The market of ESCO contracts in Ukraine is in its initial stage of development. At present ESCO companies in Ukraine work mainly with private companies, as there are no legal obstacles for making contracts between them. Recently, after the adoption in April and May 2015 of the Law of Ukraine No. 327-19 "On the Introduction of New Investment Opportunities for Energy Modernisation" and the Law of Ukraine No. 328-19 "On the Amendments to the Budget Code of Ukraine" it became possible to make such contracts with government organisations and ACABs.

3.3.8. The Energy Efficiency Fund Project

The Energy Efficiency Fund is in the process of development. The establishment of the Fund was initiated by the Government, its aim is to simplify procedures for mobilising funds from IFOs and to use them for the comprehensive energy modernisation of residential and public buildings, the former being a priority. As the experience of European countries such as Poland or Lithuania demonstrates, the Fund may become a comprehensive solution allowing to carry out energy modernisation in the whole housing sector.

At present the Government has already developed a corresponding mechanism for funding energy efficiency projects. Under this mechanism, funds from the Fund will be transferred to projects through banking institutions.

Diagram 3.19. The mechanism for funding energy efficiency projects through the Fund



Source: data of the Ministry for Regional Development

The Fund will be financed from the State Budget of Ukraine (with UAH 400 million allocated for 2017) and by donors (there is an agreement with the EU and Germany for providing UAH 100 million).

The products of the Fund will include 3 packages with various energy saving measures. It will be possible to get funds for implementing these packages, as well as a grant of up to 50% of the cost of project. The Fund will also provide technical support during the implementation of projects, since at present most households and ACABs do not know enough about energy efficiency measures.

Table 3.8. The products of the Energy Efficiency Fund

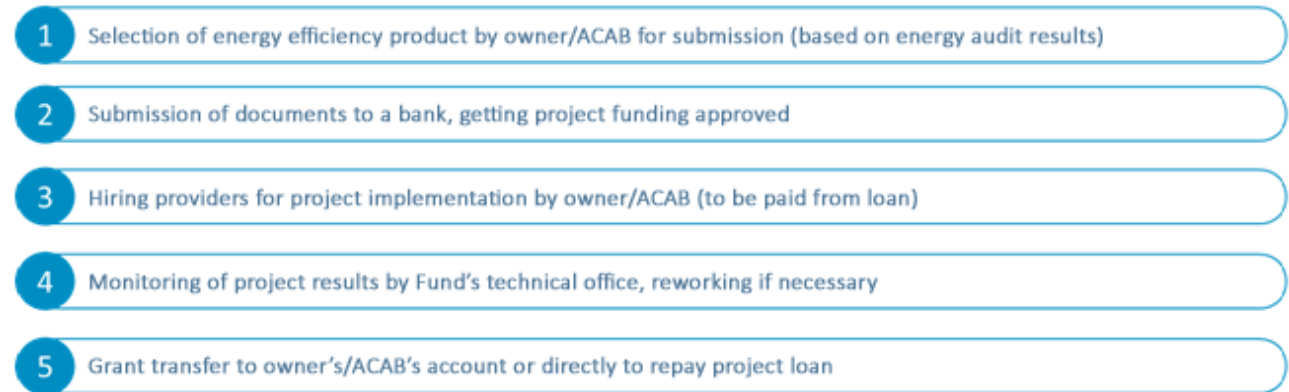
	Light Package	All-Inclusive Package	Private Package
Type of building of the project owner	Apartment block	Apartment block	Detached house
Approximate project cost	UAH 400,000 (for 100 apartments)	UAH 5 million (for 100 apartments)	UAH 120,000
Reduction in heating costs	20%	max. 60%	max. 60%

Grant	20–30%	40–50%	40–50%
Payback period	1.5–2 years	5–7 years	5–7 years

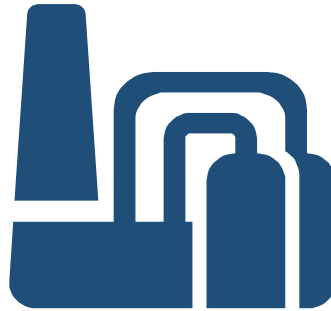
Source: data of the Ministry for Regional Development

The choice of one of these packages for each building will be made depending on the results of an energy audit.

Diagram 3.20. The stages in obtaining funding from the Energy Efficiency Fund



Source: data of the Ministry for Regional Development



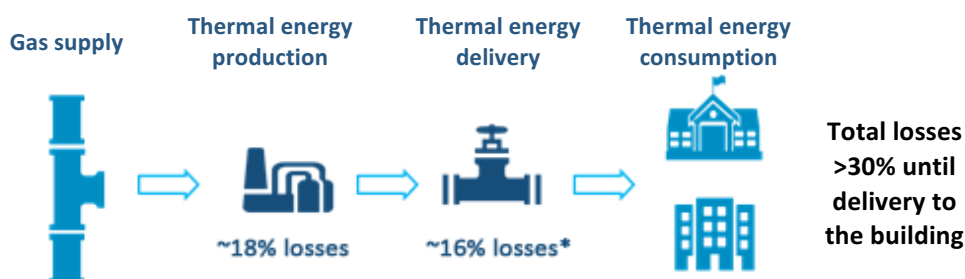
4. Funding projects to modernise thermal energy supply systems in Ukraine

Such projects are funded in accordance with the basic principles of bank lending. However, the project introduction period may exceed three years because of the excessive regulation of the state financial sector. In 2017 the total budget of the programmes of international donors and financial organisations amounts to about USD 700 million with the estimated investment needs of USD 6 billion.

4.1. Substantiation of the necessity of investments, investments needs and sources of financing

Most TKEs (thermal energy producers) are in communal ownership (owned by municipalities). The thermal energy production and distribution systems in Ukraine are obsolete and in bad technical condition, so over 30% of thermal energy is lost before it gets to consumers, also they were designed without taking into account modern trends for reducing the consumption of thermal energy in buildings. If the energy modernisation of the thermal energy production and distribution in Ukraine is fully funded, it is preliminary estimated that the natural gas consumption might be reduced by about 2.4 billion of m³ costing about USD 48 million (with 1000 m³ of gas costing ~ \$200 at the NCG hub in December 2016).

Diagram 4.1. The average energy losses in central heating systems





* data of the State Statistics Service of Ukraine (Ukrstat) Actual losses may be as high as 50%

Source: data of Ukrstat, Ministry for Regional Development

In some areas investments in the decentralisation of heating may be a more effective solution compared with investing in improving the efficiency of thermal energy suppliers. To move 20% of the market from central to decentralised heating USD 550–1,100 million are needed depending on technical solutions to be used (in more detail see the Report “Decentralised Heating in Ukraine: Potential and Ways of Implementation”).

Table 4.1. The investments needs in the energy modernisation of thermal energy supply systems

	Area	Investment need	Gas consumption reduction potential	Consumption reduction per USD 1 billion of investments
	Modernisation of thermal energy production systems	USD 3 billion	1.1 billion m ³	366 million m ³
	Modernisation and replacement of thermal energy distribution networks	USD 3 billion	1.3 billion m ³	433 million m ³
	Total	USD 6 billion	2.4 billion m³	

Source: consultants’ analysis

Programme funds available at present for investments into the energy modernisation of thermal energy supply systems amount to approximately EUR 700 million or approximately 12% of the total investments needs. However, owing to a number of problems a greater part of these funds are not used (in more detail see section 7).

Diagram 4.2. The existing programmes for funding the energy modernisation of thermal energy suppliers



Source: consultants' analysis








Most thermal energy suppliers in Ukraine are unprofitable. The operational losses of the 5 most unprofitable companies amount to approximately UAH 2 billion or 70% of the total amount of operational losses in Ukraine (for more details see Annex 2). The main reasons for the thermal energy producers running at a loss are:

- Ineffective company management and the bad technical condition of equipment
- Rates are not high enough to cover operating costs
- Payment discipline of consumers is not good enough

So a vicious circle is created when municipalities and the state have to cover the losses of the thermal energy suppliers that are a result of inefficient production, leaving no available funds for investments in energy efficiency projects.

4.2. Comparison of the terms of the programmes to mobilise funds for energy modernisation projects

Table 4.2. The terms of the programmes to mobilise funds for the energy modernisation of thermal energy supply systems

 Respective programmes	Ukreximbank programme	Demo-Ukraine	Clean Technology	EBRD loans	EIB loans	UDHEEP IBRD loans
 Interest rate	no data	6%	6%	10%	2.4-4% + EUR 50,000	approximately 1%
 Minimal amount	none	EUR 50,000	EUR 50,000	EUR 5 million	EUR 10 million	USD 30 million average project cost
 Maximum amount	USD 30 million	EUR 500,000	EUR 500,000	EUR 250 million	-	
 Term of repayment	10 years	8 years	5 years	max.15 years	22 years	18 years
 Grace period	5 years	5 years	3 months after project	to be agreed	5 years	5 years
 Grant	-	max. EUR 3 million	E5P option	E5P option	E5P option	

Source: consultants' analysis

4.3. Information about the project funding mechanisms

4.3.1. The UDHEEP IBRD programme, EIB programme “Development of Municipal Infrastructure in Ukraine” and KfW programme “Untied Financial Loan for Reconstruction of Eastern Ukraine”

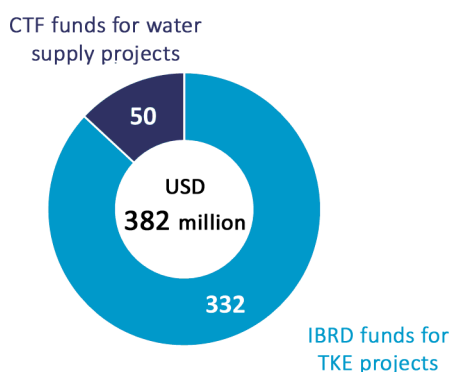
Ukraine District Heating Energy Efficiency Project (UDHEEP)



End user of loan	Thermal energy supplier
Repayment term	18 years
Interest rate	LIBOR± spread (total approximately 1%)
Grace period	5 years
Fee	0.25% of loan sum
Services of the Ministry of Finance	0.01% of subloan

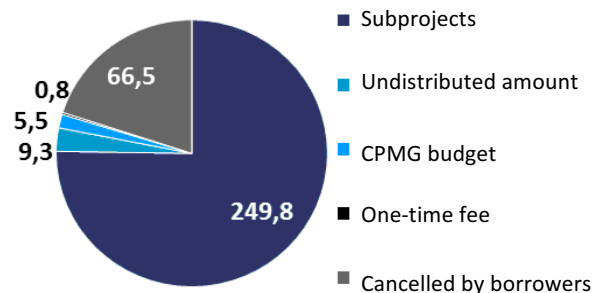
UDHEEP is the largest investment project in energy efficiency in Ukraine. The project started in May 2014 and is approved until October 2020. The budget of the project includes funds from the IBRD and the Clean Technology Fund, its total amount is USD 382 million. Loans to the Government are given sovereign guarantees.

Table 4.4. The UDHEEP budget



Source: IBRD data

Diagram 4.5. Distribution of the IBRD funds

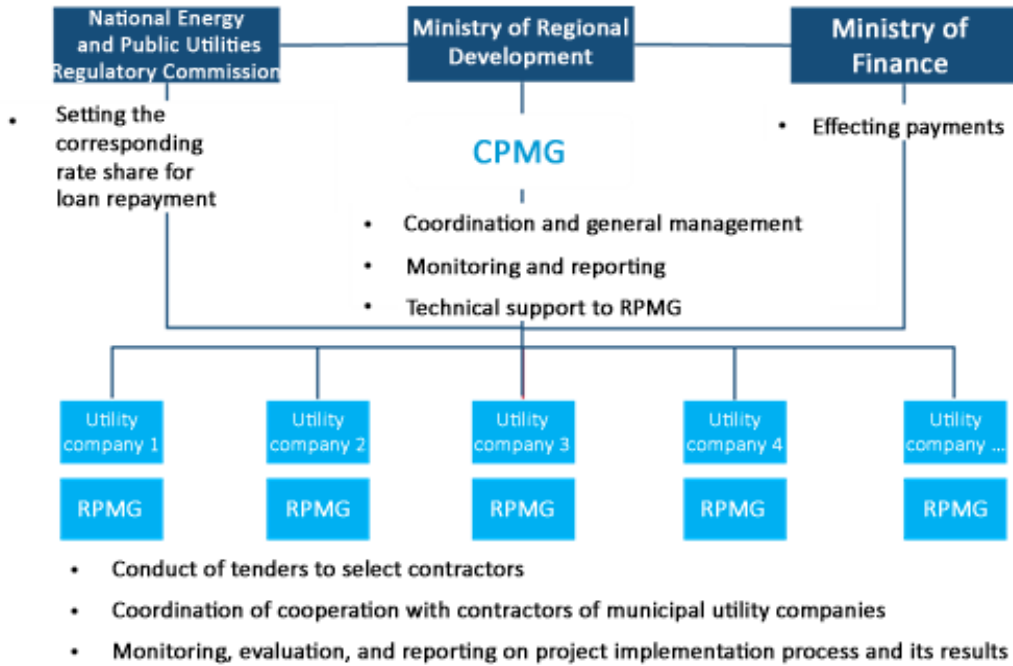


Source: IBRD data as of 09.03.2016

The participants of the project were chosen before the conclusion of the agreement between the Government and the IBRD, so at present no new participants may join the project (for more details about the procedure see section 5.1). Further mobilisation of investments in energy efficiency should take into account the practice of this project for improving the corresponding procedures.

Important roles in the implementation of the project are played by the Central Project Management Group (CPMG) and Regional Project Management Groups (RPMGs) with the activities of the CPMG funded from the funds of the project (making up 1-2% of the total project budget, and RPMGs funded by public utility companies (taking part in the project).

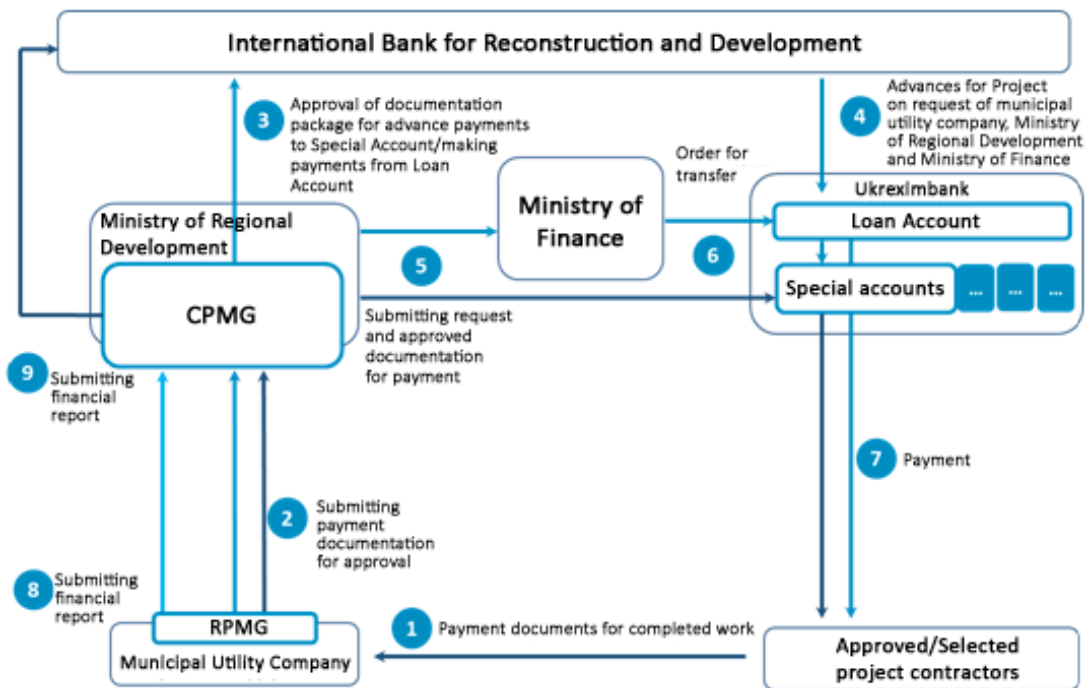
Diagram 4.6. The UDHEEP management scheme (exclude local authorities)



Source: data of the Ministry for Regional Development

Funds are provided through accounts in Ukreximbank managed by the Ministry of Finance.

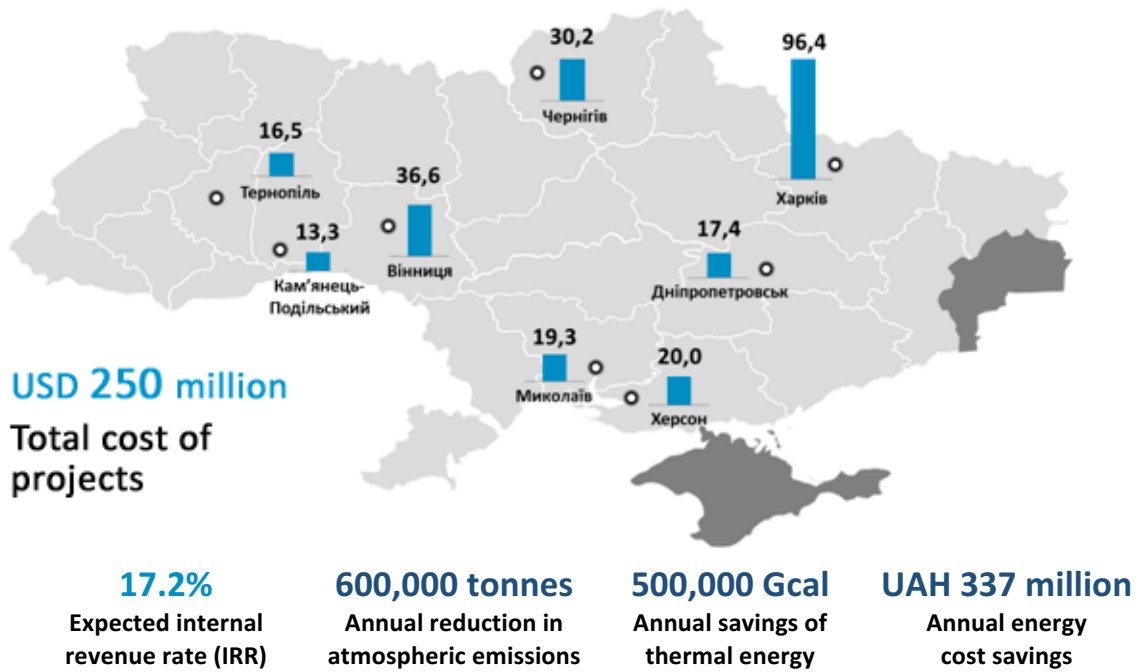
Diagram 4.7. The scheme of document management and the flow of funds



Source: data of the Ministry for Regional Development

The energy modernisation project is implemented in 8 cities with the total budget of USD 250 million.

Diagram 4.8. The geography of UDHEEP funding and its results



* The expected results of the programme include the Clean Technology Fund projects (7 additional projects)

Source: IBRD data

The EIB programme “Development of Municipal Infrastructure in Ukraine”



End user of loan	Thermal energy suppliers and authorities
Repayment term	22 years
Interest rate	2.4–4%
Grace period	5 years
Fee	EUR 50,000
Services of the Ministry of Finance	0.01% of subloan

The project “Development of Municipal Infrastructure in Ukraine” was approved by the EIB Board of Directors in May 2015, and on February 3, 2016 the agreement was signed on the provision of the EIB loan under the programme. The total amount of the loan is EUR 400 million. From this amount EUR 160 million may be used for energy efficiency heating projects with EUR 40 million available for the energy modernisation of buildings.

The minimum project cost has to be at least EUR 10 million for thermal energy supply projects and EUR 5 million for building energy efficiency projects with their duration up to 5 years.

Diagram 4.9. The stages in obtaining an EIB loan



Source: data of the All-Ukrainian Confederation of Employers of the Housing and Utilities Sector of Ukraine

The selection of EIB projects takes place after the signing of an international agreement between the EIB and the Government of Ukraine (for more details see section 5.1)

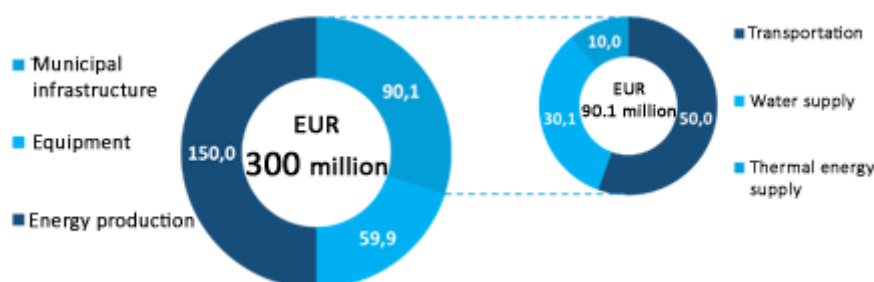
The KfW programme “Untied Financial Loan for the Reconstruction of Eastern Ukraine”



End user of loan	Thermal energy suppliers and authorities
Repayment term	15 years
Interest rate	4.5%
Grace period	5 years
Fee	0.75%

The programme of the Government of Ukraine and the KfW is focused on projects in 5 eastern regions of Ukraine (Dnipropetrovsk, Kharkiv, Donetsk, Luhansk and Zaporizhzhia Regions). The amount of the loan obtained by the Government of Ukraine is UAH 500 million, including UAH 200 million for budget spending and UAH 300 million for projects in three fields. The selection of projects takes place after the signing of an international agreement (for more details see section 5.1).

Diagram 4.10. The distribution of the loan funds between various programmes and projects (as at the end of 2015)*

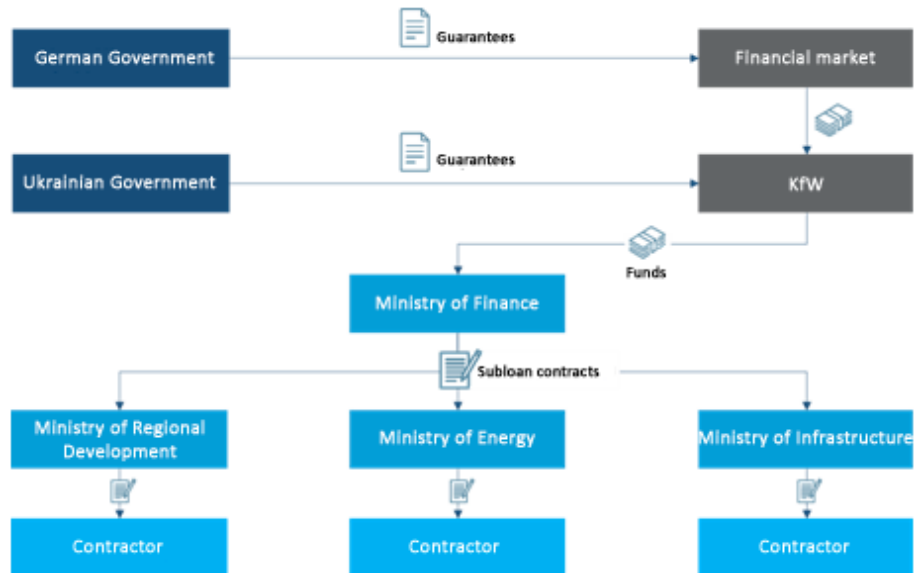


*the projects and the funds distribution structure may be changed

Source: data of the Ministry for Regional Development

To provide funds from the lender to the project executor a loan agreement between 4 or 5 parties is made (between the KfW, respective Ministry or Regional State Administration, beneficiary and optionally the National Energy and Public Utilities Regulatory Commission).

Diagram 4.11. The movement of funds from the lender to project executors



Source: data of the Ministry for Regional Development

The implementation of the programme is managed and monitored by working groups at various levels.

Diagram 4.12. The recommended organisational structure for managing the KfW programme and implemented projects



High-Level Group

- Approves project implementation priorities
- Create joint Ukrainian-German Working Group
- Signs loan contracts and other project documents

Ukrainian-German Working Group

- Selects projects and a Ministry responsible for their implementation
- Approves projects and submits them to KfW for examination
- Makes project management decisions

CPMG and RPMGs:

- Organise effective information exchange
- Report to Working Group and monitor how its decisions are complied with
- Organise and monitor regular reporting of business entities

Source: data of the Ministry for Regional Development

4.3.2. The project of Ukreximbank and the IBRD

If an IFO provides funds for energy efficiency projects through a local bank, it does not have to spend a lot of time and resources for studying regional specifics, determining risks and selecting projects. The bank selects projects on its own discretion and funds them using subloan agreements under standard procedures. The joint project of Ukreximbank and the IBRD is an example of such approach.

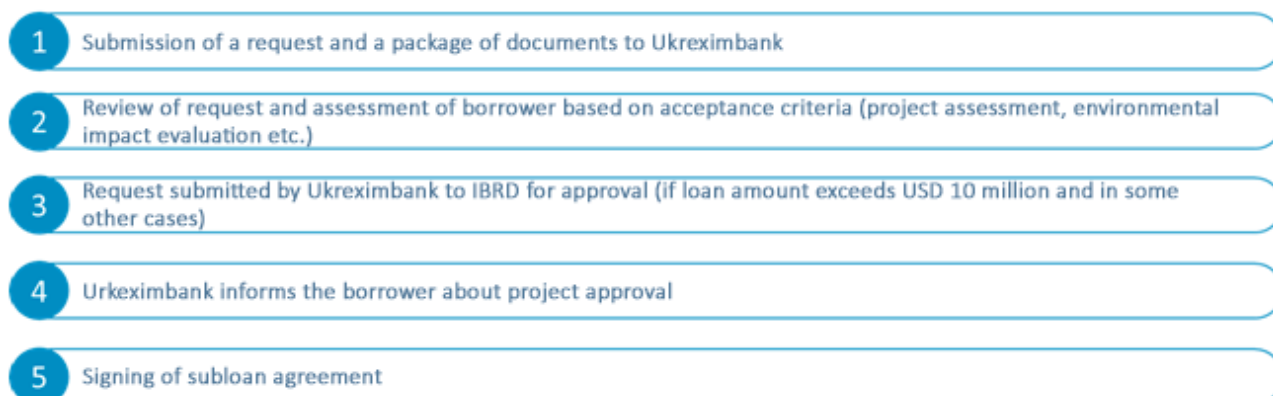


End user of loan	Thermal energy supplier
Repayment term	max. 10 years
Amount of loan	max. USD 30 million
Grace period	5 years
Fee	0.25% of loan sum
Services of the Ministry of Finance	0.01% of subloan

The project to fund the energy modernisation of thermal energy suppliers is implemented since May 2011 and will last until April 2017 with the credit line in the amount of USD 200 million. The loan to Ukreximbank is guaranteed by the Government of Ukraine (for more details see section 5.2). Ukreximbank acts as a financial intermediary between the IBRD and project executors or other banking institutions that will provide subloans for energy efficiency projects.

For a project to be financed with funds from the IBRD it must have a real internal rate of return of at least 10% (estimated exclusively on the basis of energy consumption reduction). Also as a necessary requirement for signing a loan agreement the end borrowers of funds must have a debt service ratio of at least 1.3.

Diagram 4.13. The stages in obtaining a loan from Ukreximbank



Source: The IBRD document on project evaluation (Report No. 58625-UA)

4.3.3. The EBRD and NEFCO projects

Obtaining direct funding for energy efficiency projects of thermal energy suppliers (item 5 in Diagram 2.1) makes economic sense for large loans as they are available at lower than market rates (not taking into account currency risks for loans in foreign currency). For utility companies to obtain loans from IFOs they must be guaranteed by the local authorities (for more details see section 5.3). The examples of programmes allowing utility companies to obtain loans directly from IFOs include DemoUkrainaDH and Chyste Vyrobyntstvo by NEFCo and the EBRD programme for providing direct loans to private companies.

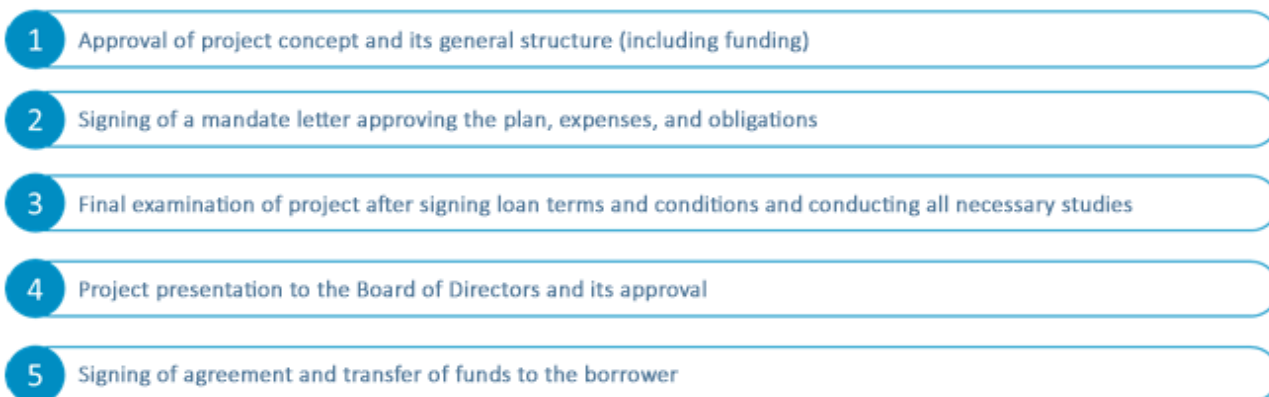
EBRD loans



End user of loan	Municipal or private companies
Amount of loan	from EUR 5 million to EUR 250 million
Annual interest rate	LIBOR+ spread (approximately 7–10%)
Repayment term	max. 15 years
Grace period	max. 3 months after project completion
Joint funding share	max. 35%

Loans from the EBRD are obtained on purely commercial basis, so they may be used also in other areas, not only in energy efficiency projects. The average amount of the EBRD loans is about EUR 25 million. The borrower must provide guarantees for the lender, such as mortgage of assets, company shares etc. as previously agreed. In addition to the interest rate, the borrower may have to pay additional fees and charges, such as mortgage assessment fee, one-time fee, currency conversion fee etc.

Diagram 4.14. Stages in obtaining a loan from the EBRD



Source: IBRD data

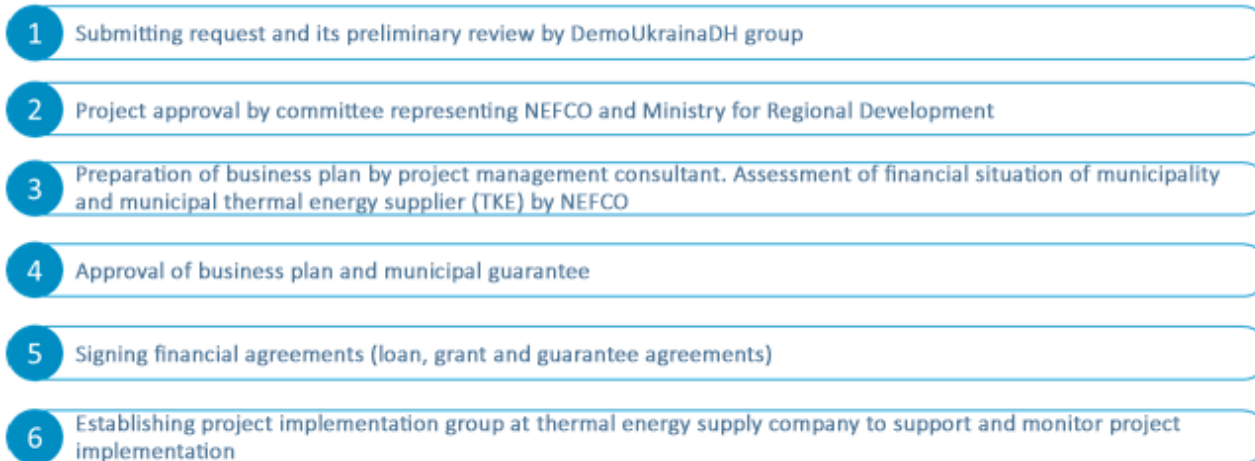
DemoUkrainaDH programme



End user of loan	Thermal energy supplier
Maximum loan	EUR 500,000
Repayment term	max. 8 years
Interest rate	6%
Grace period	5 years
Grant	max. 50% of external funding, not exceeding EUR 3 mil.
Share of project funding by lender	over 15%

DemoUkrainaDH is a funding facility established by NEFCO and Sida in cooperation with the Ministry for Regional Development. The lender must provide a municipal guarantee of up to EUR 500,000.

Diagram 4.15. The stages in the project implementation



Source: Data of DemoUkrainaDH

At large 18 projects were started in Ukraine with 6 of them already completed.

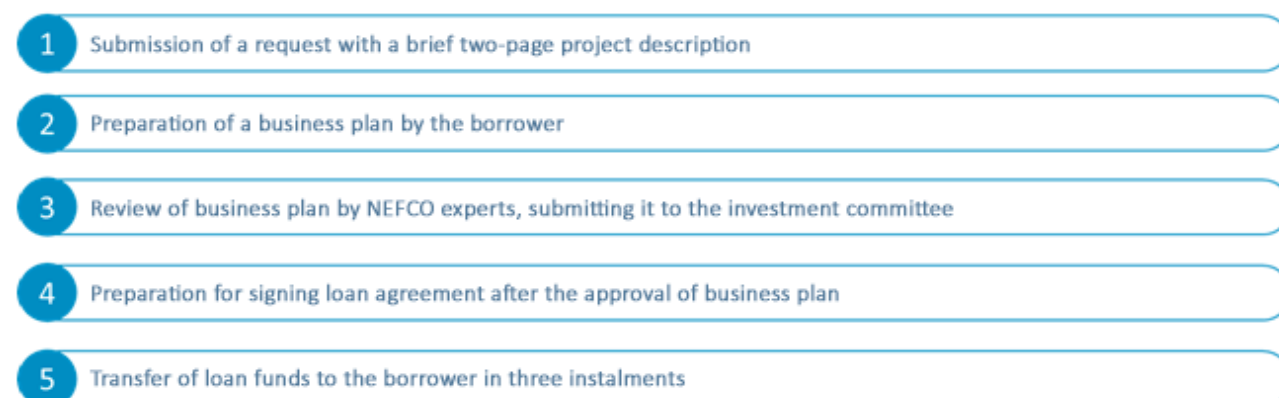
“Chyste vyrobnytstvo” Programme



End user of loan	Municipal or private companies
Amount of loan	EUR 50,000-500,000
Annual interest rate	6%
Repayment term	max. 5 years
Grace period	max. 3 months after project completion
NEFCO’s share in project funds	max. 90%

“Chyste vyrobnytstvo” Programme provides funding for projects aimed at reducing industrial pollution and measurable environmental impact is its basic indicator for project assessment. In particular, such impact may be achieved through the energy modernisation of industrial enterprises resulting in the reduction of energy consumption. Besides improving the environmental situation, to get a loan the project has to have ROI of about 25%. Collateral/guarantee 125% (may be a municipal guarantee, real property or equipment).

Diagram 4.16. The stages in obtaining funding under “Chyste vyrobnytstvo” Programme



Source: data of NEFCO

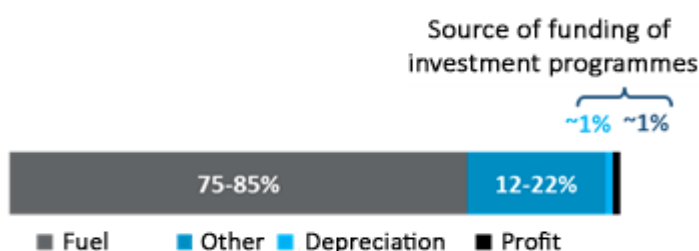
Loans are repaid in quarterly instalments. Until the full repayment of the loan the borrower provides annual reports on achieved environmental impact.

As of 01.03.2013 contracts for 29 projects in Ukraine were signed with NEFCO for the total amount of about EUR 28 million, of which 14 projects (for the amount of EUR 8 million) had their local guarantees agreed with the Ministry of Finance and approved by the Cabinet of Ministers of Ukraine.

4.3.4. Funding of programmes by thermal energy suppliers from their own funds

Technical equipment of thermal energy producers and distributors is modernised and replaced under their own investment programmes as well. According to Orders of the Ministry for Regional Development No. 630 and of the Energy and Utilities National Regulatory Commission No. 381, each municipal thermal energy producer (Teplokomunenergo or TKE) must have such programme approved annually. However, less than a half of the thermal energy producers (89 out of 183 in 2015) have charge rates sufficient for making any investments. Some programmes are not approved because they are not compliant with law. For other thermal energy producers the investments share in their charge rates is very low. As a result the thermal energy producers (TKEs) are not able to improve energy efficiency using their own funds and must have external instruments for financing such projects.

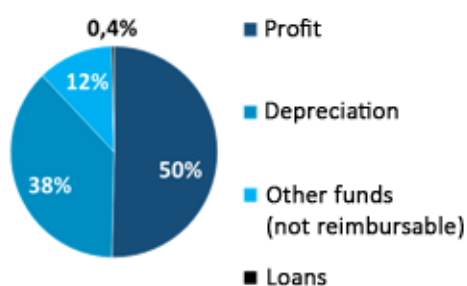
Diagram 4.17. Investments share in the charge rates



Source: Energy and Utilities National Regulatory Commission data

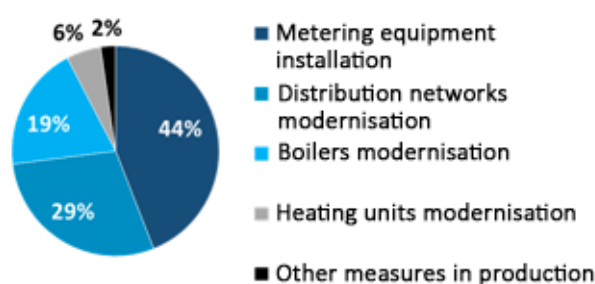
In 2015 the total amount of investment programmes approved by the Energy and Utilities National Regulatory Commission was UAH 927,760,000. Loans as an investments source for TKEs account only for 0.4% of all investments into energy modernisation in 2015. This is stipulated by the complexity of the approval procedure for investments programme with loans (because this results in growing charge rates), other problems with the use of such funds and repayments of loans.

Diagram 4.18. The sources of funding of the Energy and Utilities National Regulatory Commission investments programmes in 2015



Source: Energy and Utilities National Regulatory Commission data

Diagram 4.19. The areas where the funds of the investments programmes were used



Source: Energy and Utilities National Regulatory Commission data

Because of a number of problems with the operational activities of the thermal energy producers the approved investments programmes were actually funded only by 39% or UAH 357,705,000.



5. Procedures and conditions for obtaining funding

Procedures for obtaining funding for energy efficiency projects are regulated by a great number of laws and regulations. Besides, the Ukrainian legal procedures does not always fully correspond to the procedures of IFOs. This complicates and prolongs the process for obtaining funds for projects. The expected period from the initiation of a project until the beginning of its implementation is at least three years, including project selection (approximately 1 year), provision of sovereign guarantees and signing of an international agreement (approximately 1–2 years), preparation of operational manuals, conclusion of contacts and conducting tenders (more than 1 year).

5.1. Procedure for the conclusion of agreements on providing loans with sovereign guarantees between the Government of Ukraine and IFOs

Loans for funding energy modernisation projects of thermal energy suppliers could be employed by the Government of Ukraine. However, the processes for employing such loans are quite difficult to administer and are regulated by a great number of regulations and contracts. An international agreement serves as a main legal document on the basis of which the Government of Ukraine obtains loans. Additional subloan agreements are signed for funding specific projects. The movement of funds, budgeting and reporting, purchasing (tendering) and other processes are regulated by respective operational manuals.

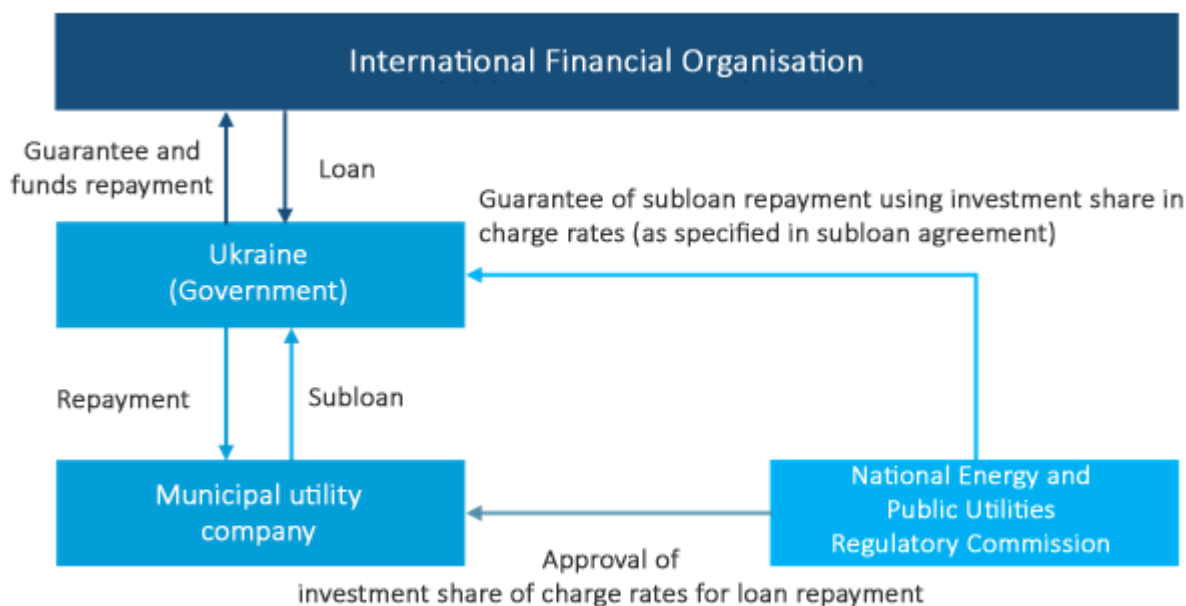
Diagram 5.1. Main documents regulating projects funded by IFO loans



Source: consultants' analysis

Loans from IFOs get sovereign guarantees from the Government of Ukraine.

Diagram 5.2. The general scheme of operation for projects with sovereign guarantees



* some loans from IFOs obtained with sovereign guarantees may be repaid directly from the national or local budgets

Source: data of the Ministry for Regional Development

All international loan agreements between IFOs and the Government of Ukraine are concluded in accordance with the procedure described in the Government Resolution of the KMU No. 70. The expected duration of the process to conclude a loan agreement with sovereign guarantees is approximately one year.

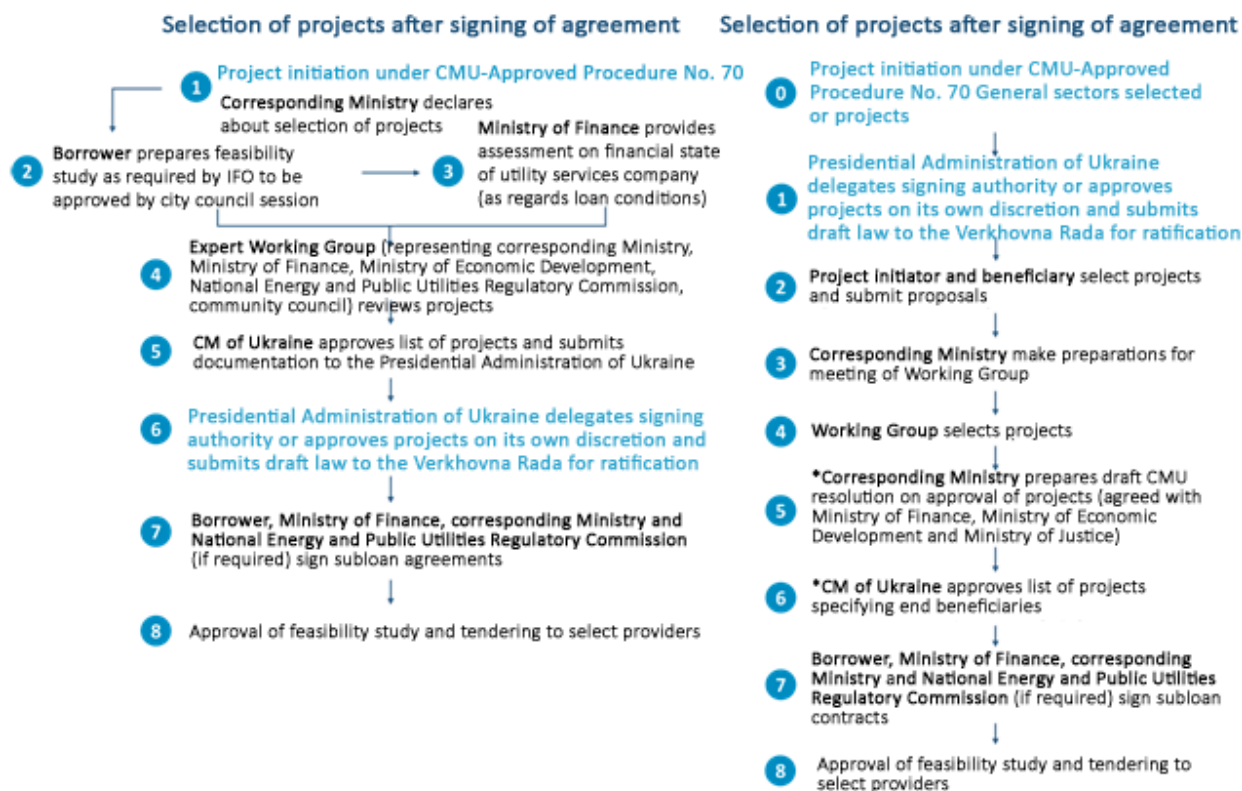
Diagram 5.3. The process for concluding a loan agreement according to the Resolution of the CMU No. 70



Source: Resolution of the CMU No. 70, consultants' analysis

energy efficiency projects to be funded from loans obtained by the Government of Ukraine from IFOs may be approved either before or after the signing of the international loan agreement. The expected duration of the project selection process is approximately one year.

Diagram 5.4. The process of obtaining IFO loan funds for the implementation of projects depending on the time of their selection



* if is not specified otherwise by the corresponding international agreement

Source: data of the Ministry for Regional Development

After the signing of all subloan contracts, a tendering process for choosing subcontractors and preparations to pay for their services may continue for about a year and a half.

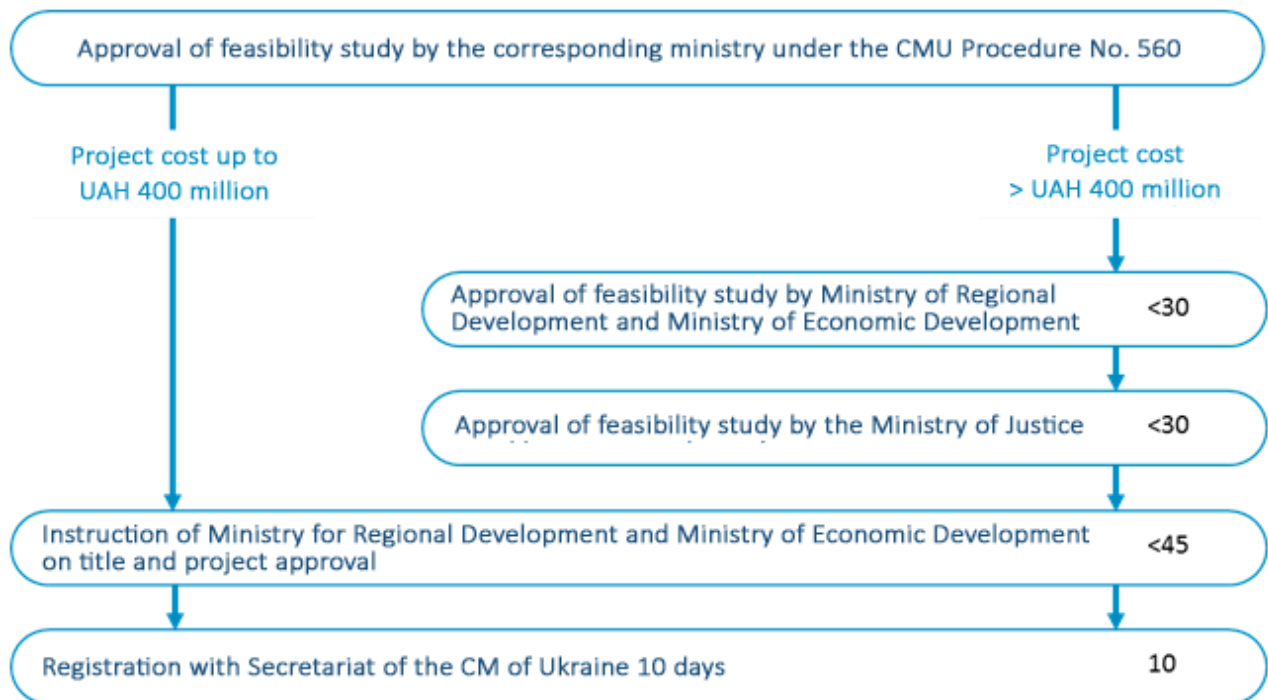
Diagram 5.5. The expected duration of the tendering process and payments under contracts



Source: data of the Ministry for Regional Development

The approval of project documentation (including feasibility study) is done as described in the Resolution of the CMU No. 560. Duration of the approval period depends on the cost of the project and increases by about 2 months if the cost exceeds UAH 400 million.

Diagram 5.6. The approval procedure for feasibility study

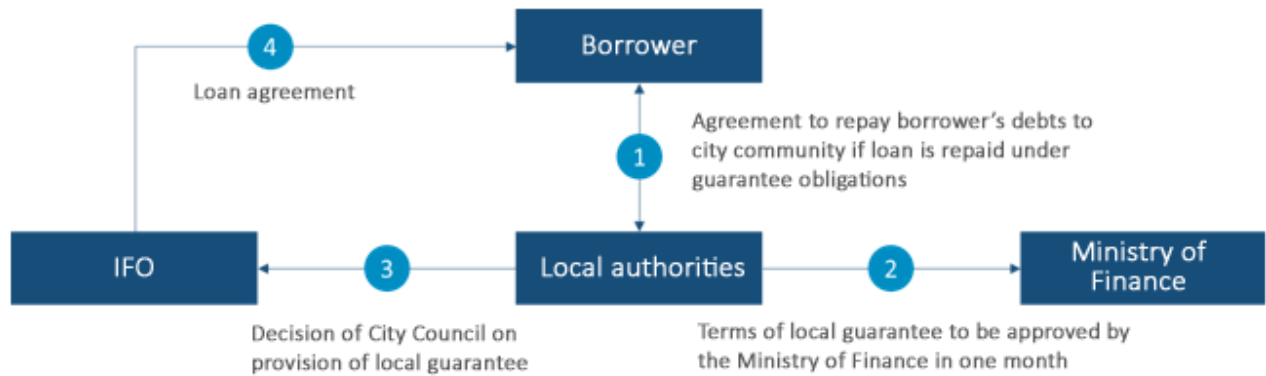


Source: data of the Ministry for Regional Development

5.2. The procedure for providing municipal guarantees for loans obtained from IFOs

To obtain direct loans from IFOs, thermal energy suppliers must provide municipal guarantees. Such guarantees are currently provided for projects under the NEFCO and EBRD programmes. Municipal guarantees are provided by the local self-governing bodies in the form of a corresponding resolution that has to be agreed with the Ministry of Finance.

Diagram 5.6. The scheme for providing local guarantees for a direct IFO loan



Source: Resolution of the CMU No. 541 dd. 14.05.2012

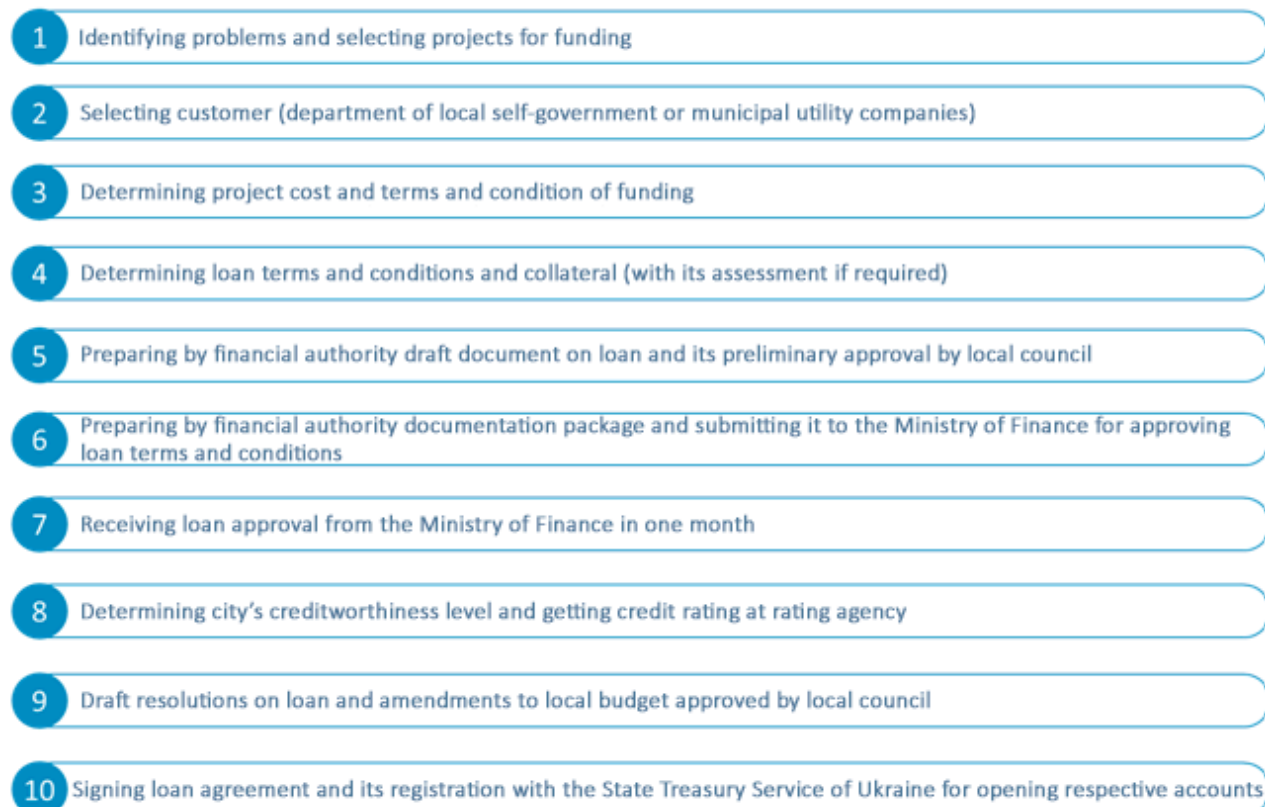
Main condition for approving a local guarantee by the Ministry of Finance is that the new amount of local guarantees (in case of approval) must not exceed the limit amount of 200% (400% for Kyiv) from the average expected annual budget income, excluding local loans and capital subsidies from other budgets.

The approval of the amount and conditions for the provision of the local guarantee by the Ministry of Finance does not mean that the Government guarantees that the borrower will fulfil its obligations in connection with the local guarantee or endorses its creditworthiness.

5.3. Procedure for obtaining loans by local self-governing bodies

According to the Law of Ukraine “On Local Self-Government” and the Budget Code of Ukraine, local self-governing bodies may obtain external funding (loans). The procedure for approving such loans is regulated by the Resolution of the Government of Ukraine No. 110.

Diagram 5.7. Stages in obtaining loans by local self-governing bodies



Source: consultants' analysis

5.4. Operational conditions for private thermal energy suppliers

Privately owned thermal energy suppliers may obtain loans and repay them from their own incomes at their discretion. The income of the thermal energy suppliers entirely depends on the level of charge rates approved by the Energy and Utilities National Regulatory Commission or the local authorities. The charge rates are the main factor in ensuring the creditworthiness of a company and its ability to obtain investments for energy efficiency projects and should provide for all financial expenses.

What body grants a license to a thermal energy supplier depends on the maximum amount of thermal energy produced, transported or supplied and/or on the number of areas where it operates. 97% of thermal energy available at the heating market is provided by companies licensed by the Energy and Utilities National Regulatory Commission.

Diagram 5.8. Who licenses thermal energy suppliers

LICENCED BY THE NATIONAL ENERGY AND PUBLIC UTILITIES REGULATORY COMMISSION

~ 97%
of thermal energy

- Thermal energy supplier is licensed by National Energy and Public Utilities Regulatory Commission if it:
 - operates in more than one region or
 - produces annually > 18, 000 Gcal
- 248 licensees
- 48.4 million Gcal consumed in 2015

LICENCED BY LOCAL AUTHORITIES

~ 3%
of thermal energy

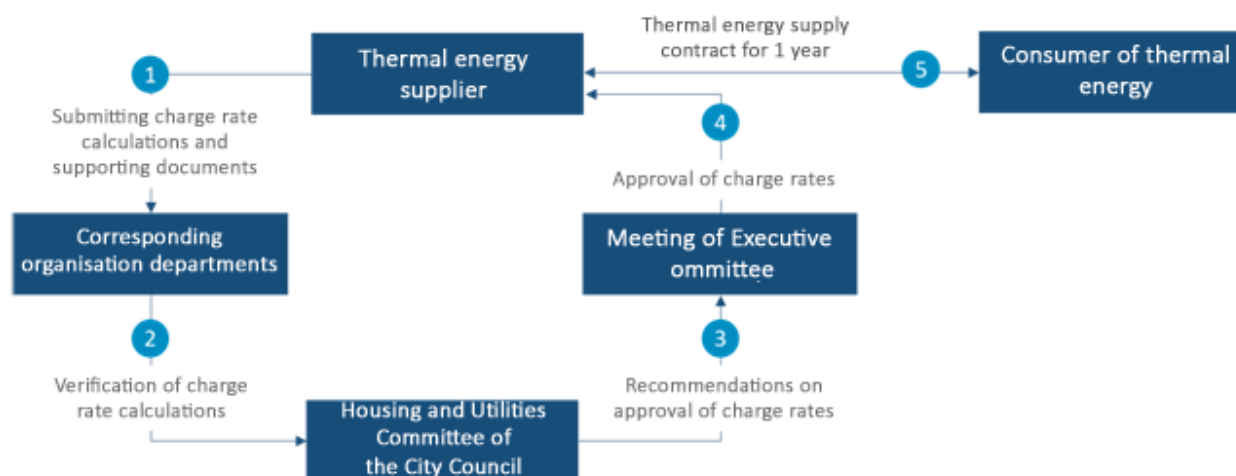
- Thermal energy supplier is licensed by local authorities if it:
 - operated only in one region and
 - it produces annually < 18,000 Gcal
- ~750 licensees
- 1.5 million Gcal consumed in 2015

Source: Resolutions of the Energy and Utilities National Regulatory Commission No. 276-78, Energy and Utilities National Regulatory Commission data, consultants' analysis

Loans obtained by thermal energy suppliers require paying interest rates for their use, resulting in higher prices for thermal energy for end users (method COST+). In this connection there may be certain problems with the substantiation of charge rates when getting approval for them from the corresponding licensor.

The procedure for establishing or adjusting the charge rate and its approval is initiated by the thermal energy supplier, its duration is about 1-2 months.

Diagram 5.9. The charge rate approval procedure for a company licensed by the local authorities



Source: consultants' analysis

The charge rate approval procedure for companies licensed by the Energy and Utilities National Regulatory Commission is similar (excluding the Housing and Utilities Committee).

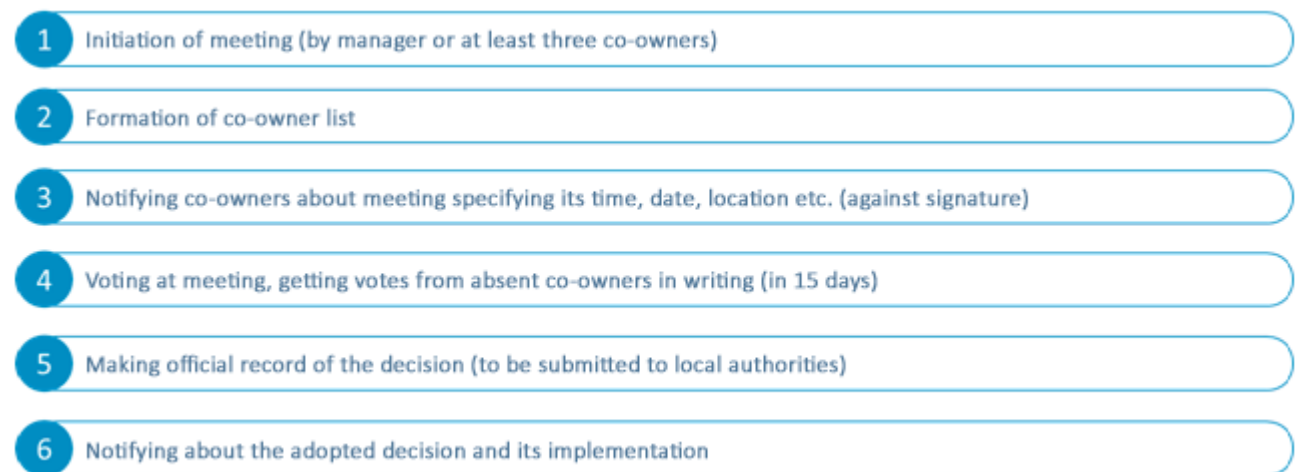
Charge rates are approved for 1 calendar year; after this period (or earlier, if there is a significant change in expenses) they are necessarily reviewed.

5.5. Procedures for decision making at ACAB

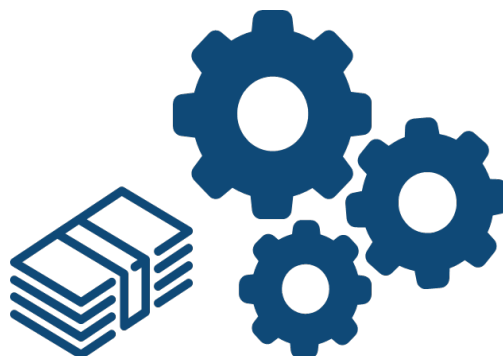
In accordance with the Law “On the Specifics of Exercising Property Rights in Apartment Blocks” adopted in 2015, an approved decision by the co-owners is needed to initiate an energy efficiency project in the building owned by an Association of Co-Owners of Apartment Block. Decisions on conducting repairs, energy efficiency projects, obtaining loans etc. must be adopted at general meetings of co-owners by at least 75% of the votes. The votes are assigned proportionally to the size of co-owners’ housing area (including both living and non-living area).

An adopted decision must be documented in a corresponding record signed by all co-owners; this record is one of required documents to be submitted to a lender for obtaining a loan.

Diagram 5.10. The stages in adopting joint decisions at ACABs



Source: IFC data



6. Grants and technical support for energy efficiency projects in Ukraine

energy efficiency market is relatively new for Ukraine, so even its key players do not have sufficient knowledge of tools and mechanisms available for the implementation of projects. The aim of technical support programmes is to help enterprises, households, authorities and private companies in implementing energy efficiency projects. Such technical support programmes are provided in Ukraine by the governments of the US, Canada, Switzerland, Germany and other countries, as well as by the EU and various funds and donors.

Besides the technical support programmes there are also grant programmes for energy efficiency projects.

6.1. The grants support programme for energy efficiency projects (E5P Fund)

Grant support is an effective tool for encouraging energy efficiency projects. Such support helps to reduce financial burden for thermal energy suppliers implementing energy efficiency projects and to reduce the growth of their charge rates during the repayment period. At present grants in addition to obtained loans under other IFO programmes are provided in Ukraine by the E5P Fund.



Grant max. EUR 5 million

Programmes for which grants are provided: NEFCO, EBRD, EIB, IBRD and NIB (Nordic Investment Bank)

E5P is a multi-donor fund established in 2009 in Sweden. The total budget of the Fund is EUR 168 million with 65% of the budget (about EUR 108 million) earmarked for projects in Ukraine. The remaining EUR 60 million are divided in equal parts between Georgia, Armenia and Moldova. The donors of the E5P programme are 13 different countries and the EU. Three largest donors provide 70% of the total budget (the EU—EUR 40 million, Sweden—EUR 27 million and Germany—EUR 11 million).

Diagram 6.1. Share of Ukraine in the total budget of the Fund



Source: E5P data

Diagram 6.2. Structure of the E5P budget for projects in Ukraine



Source: E5P data

Table 6.1 Examples of projects provided with E5P grants

Project	Lender	Project cost	E5P grant	Status
Energy efficiency for public buildings (Zhytomyr)	NEFCO	EUR 4.70 million	EUR 1.35 million	Completed
Modernisation of municipal thermal energy supplier (TKE) (Kryvyi Rih)	EIB	EUR 38.00 million	EUR 6.40 million	Approved
TKE modernisation (Ternopil)	EBRD	EUR 16.10 million	EUR 5.00 million	Completed
Energy efficiency for public buildings	EBRD	EUR 22.50 million	EUR 2.50 million	Completed

(ESCO project)

Source: E5P data

Until 2019 the E5P Fund will provide EUR 60 million for the implementation of energy efficiency projects in Ukraine. The E5P programme might be extended in Ukraine beyond 2019, depending on the results of the projects.

6.2. The UNDP project “Ukraine Energy Efficiency Secretariat and Expert Hub” (with the support of Slovakia)



Implementation period	June 2016–June 2017
Project goal	Developing an effective energy policy in Ukraine


The project was started under the UN Development Programme in Ukraine with the financial support of the Government of Slovakia. The secretariat and expert hub established under the project will provide informational, consultative and technical support to the Government of Ukraine. This support includes such areas as improving energy safety, improving energy efficiency and developing sustainable energy production in Ukraine. The following activities are carried out during the implementation of the project:

- Establishing a mechanism for supporting the Government through the expert hub and improving coordination between the key players in the Ukrainian energy market to promote initiatives on improving energy efficiency, corresponding laws and regulations etc.
- Supporting government reforms in the energy sector, including the establishment of the Energy Efficiency Fund
- Sharing experience in introducing the best international practices in energy efficiency and sustainable energy production through a number of pilot projects
- Helping the Government to develop the market of energy service companies (ESCO) as a key instrument for obtaining additional investments in the energy efficiency sector in Ukraine

The outputs of the project will include over 20 analytical reports:

- Strategy for the development of the energy market in Ukraine
- Concepts and action plans for the introduction of energy production reforms in Ukraine
- Action plan for the winter period 2016-2017
- Recommendations on the introduction of energy-efficient approaches in various sectors, including the housing sector
- Review of investments opportunity in the housing sector, viability of introducing decentralized heating, using alternative energy sources etc.
- Other issues in improving energy safety, energy efficiency and developing alternative energy production in Ukraine

6.3. USAID Municipal Energy Reform in Ukraine (MERP)

	Budget	\$ 14.5 million
	Implementation period	September 2013–September 2017
	Project goal	Support of energy efficiency improvement measures, including the harmonisation of respective Ukrainian laws and regulations with the corresponding laws and regulations of the EU.

The project is implemented in four areas:

1. Improving the legislative framework
2. Attracting investments into energy efficiency and clean energy
3. Developing professional potential and disseminating the best practices
4. Developing a strategy for low-carbon development in Ukraine

The project is implemented both at the national and local levels in 17 selected partner cities. They include Vinnytsia, Dnipro, Zaporizhzhia, Ivano-Frankivsk, Kamianets-Podilskyi, Kyiv, Kramatorsk, Kryvyi Rih, Lutsk, Lviv, Pavlohrad, Rivne, Sumy, Ternopil, Kherson, Khmelnytskyi, Chernihiv. Also in 13 partner cities Resource Centres for ACAB Support have been created, where consultations are provided on establishing ACABs and their activities and trainings are conducted. The project approach to its implementation.

Table 6.2 Areas of project implementation

National level:

- Strengthening legal, regulatory and institutional basis for improving municipal energy services
- Improving tariff regulation
- Improving social protection of population
- Conducting a public awareness campaign

Municipal level:


- Developing the capacity of the partner cities in the planning, management and funding of the energy systems development
- Attracting investments for projects from investors at various levels (creating effective mechanisms and procedures)
- Training the public

Source: USAID data, analysis of consultants

The expected outcomes of the project:

- Saving 266 million m³ of natural gas
- Attracting \$ 200 million in energy efficiency and clean energy projects
- Reducing CO₂ emissions by 500 thousand tons
- Functioning of an independent regulator in accordance with the best international practice
- Using new charge rate methodology and benchmarking at 100 municipal companies
- Creating 10 regional clean energy resource centres etc.

6.4. The IFC Residential Energy Efficiency Project

	Implementation period	Implemented since 2010
	Project goal	Improving energy efficiency in the housing sector

The goal of the project is to establish a legal and institutional framework for creating opportunities for ACAB and managing companies to obtain funding for energy efficiency projects. The project is implemented in close cooperation with the Government of Ukraine and other donor in the following areas:

1. Developing and improving laws and regulations to create opportunities for ACABs in obtaining funding for energy efficiency projects
2. Creating tools for funding energy efficiency projects in close cooperation with commercial and state banks
3. Increasing the expert knowledge of interested parties in energy efficiency

The IFC plays an important role in developing and promoting a package of Ukrainian laws required for establishing effective relations in the energy efficiency market and creating the Energy Efficiency Fund. Such laws include the laws “On the Specifics of Exercising Property Rights in a Multi-Apartment Building” (adopted), “On Housing and Utility Services” (2nd reading at the Verkhovna Rada (Parliament of Ukraine), “On the Accounting of Utilities” (2nd reading), “On the Energy Efficiency of Buildings” (submitted to Verkhovna Rada), “On the Energy Efficiency Fund” (approved by the Government).

To introduce financial tools, the IFC provides technical support in the development of the “Warm” Loans programme, Energy Efficiency Fund and regional funding projects.

To improve the expert knowledge of all interested parties (including the Government) in energy efficiency, the IFC prepares promotional and informational leaflets, booklets, analytical reports, presentation materials etc.

6.5. The GIZ projects in Ukraine—“Energy Efficiency in Municipalities” and “Establishing Energy Agencies”

Energy Efficiency in Municipalities



Budget	EUR 4 million
Implementation period	September 2013–April 2017
Project goal	Strengthening the role of municipalities in improving energy efficiency

The main goal of the project is to strengthen the role of municipalities as a driving force in improving energy efficiency.

Consultative support is provided in two fields:

- at the national level—on establishing necessary legal framework for creating energy agencies and introducing energy efficiency projects;
- at the regional level—on introducing energy management, planning and implementing local programmes to improve energy efficiency. Training and in-service education activities are conducted for municipal workers.

Five larger communities in Dnipropetrovsk, Chernivtsi, Poltava, Zhytomyr and Luhansk Regions take part in the project (in total 16 towns). Acquired knowledge and practices are shared among professionals working in government and self-government agencies at all levels.

The outcomes of the project are:

- ten partner municipalities joined the European Covenant of Mayors, and develop and implement action plans to reduce energy consumption by 20% by 2020
- Energy efficiency measures were implemented in accordance with the development plans in three towns (development continues in other towns), consultations were provided and a hospital heating system was modernised in Dnipro
- 60 employees of municipal agencies took part in trainings on energy efficiency in Germany
- Over 100 activities were conducted to share best practices and knowledge in energy efficiency at the municipal level

Establishment of Energy Agencies in Ukraine



Budget	EUR 3 million
Implementation period	Jan. 2014–Feb. 2018
Project goal	To study the potential for introducing energy efficiency programmes at the national and regional levels

The project aims to provide conditions for investing in energy efficiency projects in Ukraine, mainly, with the support of unified communities as they may become a powerful driving force in introducing energy efficiency projects. The project is implemented in three fields:

- at the national level—cooperation with the authorities to improve the existing legal framework helping to attract investments and introduce energy efficiency measures;
- at the local level—establishing energy agencies in two pilot regions. The development and implementation of a business plan for Odesa Municipal Energy Agency that will serve as an example and the source of practical experience for other municipalities
- Conducting an information campaign and sharing the best practices with all interested parties

The City of Odesa already had a pilot energy agency. Its objective was to provide consultations on implementing energy efficiency projects for local communities and informing the public on this subject.

An energy management system was established on the basis of Odesa Energy Agency and EUR 500,000 of funds obtained for modernizing three municipal schools. Studies and reviews were conducted at the national levels helping to conduct reforms in energy efficiency.

The project is implemented with the support of the following partners: The Ministry of Regional Development, Odesa Oblast (Regional) Council, Odesa City Council and the Energy-Efficient Cities of Ukraine Association.



7. Factors constraining the development of energy efficiency funding programmes

Main obstacles in obtaining funds for the modernisation of thermal energy supply systems



The rates setting methodology does not ensure the availability of funds for investments that hampers their employment

1

Because of possible social discontent the authorities sometimes do not agree to include expenses for energy modernisations into the charge rate and increase it. This significantly constraints the process of obtaining loans for investment projects as companies are not able to pay interest rates for using loans

2

The fixed assets of companies have not been reevaluated for a long time resulting in a lesser amount of depreciation deductions included in the charge rate. As a result municipal thermal energy suppliers (TKEs) do not have funds necessary for major repairs or modernisation.

3

The rate setting for TKEs is done using “COST+” methodology that does not encourage (and actually discourages) investments. Firstly, the charge rate does not include a profit margin for investors. Secondly, the thermal energy suppliers are not encouraged to modernise or replace its equipment as the charge rate covers all ineffective expenses and is automatically reduced in case of any savings.

4

The current system of settlements between the players in the thermal energy market is very complicated because the final dates for payments for natural gas and centralised heating are not compatible, the ineffective existing clearing system and the lack of motivation for customers to pay in time for this service

5

The existing subsidised payment system has the following disadvantages: (a) there is no clearly defined liabilities for not paying in full/ in time for received services for consumers and numerous intermediaries taking part in settlements; (b) there is the lack of control to ensure that accrued subsidies correspond to actually received ones; (c) the existing system encourages reciprocal offsets that has a negative effect on overall settlements and liabilities for incorrectly determined payment amounts.



Shortcomings of the Ukrainian laws and their incompatibility with the IFO procedures slow down the processes of approval and implementation of investments projects

1

The current version of the Order of the Ministry for Regional Development and the Energy and Utilities National Regulatory Commission No.630/381 contradicts the rule of all international financial organizations, creating as a result significant obstacles in using grants and loans for investments in thermal energy and water supply projects.

2

Per the Law “On Investment Activities” prior to the provision of local guaranteed investment projects must be selected and registered with the Ministry of Economic Development and Trade. Such approach in fact prevents the provision of local guarantees for investment projects.

3

Also modern equipment and design principles may not correspond to the current Ukrainian construction norms and standards. As a result there may be problems with getting approvals from the Ukrainian construction and other authorities.

4

Investment programmes of thermal energy suppliers are not approved by the Energy and Utilities National Regulatory Commission as its procedures for assessing investment business plans differ from IFO procedures. For example, prior to approving an investment programme the Energy and Utilities National Regulatory Commission demands completed project documentation with price proposals that is in direct contradiction with IFO requirements

- 5 If a thermal energy supplier has debts for consumed natural gas, its accounts may be blocked together with IFO investment funds (if the project is provided with local guarantees). This problem is partially solved if the company may use the Law “On Debts Restructuring”, however, such approach provides only a temporary solution. If the project has sovereign guarantees as described in the Resolution of the CMU No. 70, corresponding accounts have a special status and are protected as specified in the Law of Ukraine “On Heat Supply”.
- 6 A long and complicated registration process with the Ministry of Economic Development for grants provided under investment projects. Even if changes in the project are insignificant, the corresponding registration procedure is almost the same as for a new project. This problem mainly concerns the registration of new contractors in the framework of an already existing programme.
- 7 There is no existing mechanism for VAT refunds when payments for goods or services are made using grant funds.

The main obstacles in obtaining funding for energy modernisation of residential and public buildings



Funds allocated from the state budget for energy efficiency programmes are not sufficient to meet all demands of households and local authorities. However, almost one half of households receives subsidies for utilities payments.



The existing programmes for funding energy efficiency improvements are oriented mainly at individual investment projects; as a result it is impossible to achieve a maximum possible reduction in energy consumption



The lack of a legal framework for the energy efficiency market regulating relations between key market players makes it more difficult to create funding mechanism and to introduce energy efficiency projects

General obstacles in obtaining funding and introducing energy efficiency projects



The lack of corresponding knowledge among households, municipal and private companies, local authorities and other energy efficiency market players significantly slow down the process of obtaining funds and the implementation of energy efficiency projects



Demand for loans from commercial banks is low owing to high interest rates in the market. Payback periods for energy efficiency projects with such funding may be significant



8. Recommendations for improving energy efficiency and developing corresponding funding mechanisms

Recommendations for improving investment environment for the energy modernisation of thermal energy supply systems



Improving charge rate setting procedures for thermal energy suppliers to increase their investment potential and motivations for implementing energy modernisation

- 1 Including financial expenses for repaying the loan principal into charge rates to ensure the fulfilment of the obligations of thermal energy suppliers to IFOs
- 2 Revaluation of the assets of thermal energy suppliers to determine a fair amount of depreciation
- 3 Introducing the elements of a motivating rate setting procedure. For example, freezing certain rate components for 3-5 years (with adjustments) to motivate companies to reduce operational expenses. Consider options for changing over to a more efficient charge rate setting method such as price cap or benchmarking



Improving Ukrainian legislation framework and making it compatible with IFO procedures

- 1 Harmonisation of the Ukrainian procedures for project registration with the IFO procedures by adopting new laws and regulations and amending the existing ones
- 2 Making amendments to the Tax Code to introduce a mechanism for refunding VAT
- 3 Making amendments to the Law of Ukraine “On Investment Activities” and the Resolution of the CMU No. 541, 835 and 701 to cancel the requirement for a prior selection and registration of municipal investment projects with the Ministry of Economic Development
- 4 Adopting new norms and regulations necessary for the effective functioning of thermal energy suppliers
- 5 Establishing special bank accounts for municipal thermal energy suppliers (TKEs) to collect funds and repay IFO loans that will protect IFO funds from blocking
- 6 Developing a concept for reforming the centralised heating sector describing measures for creating favourable investment environment for modernising assets, including a simplified procedure for approving investment programme and protection of lenders’ rights
- 7 Creating and maintaining a database of current and planned projects funded by IFOs and donors
- 8 Developing norms and regulations required for the implementation of the Law of Ukraine “On Restructuring Debts of Thermal Energy and Water Suppliers for Energy”

Recommendations for improving the investment environment for the energy modernisation of residential and public buildings



Extending the existing mechanisms for providing government support to energy efficiency programmes and creating new ones

1

Continuing the implementation of the state energy efficiency programme “Warm” Loan and its improvement (making amendments to the Resolution of the Government No. 1056) regarding selective inspections of projects, including commercial bank into the programme etc.

2

Establishing Energy Efficiency Fund to create tools for the comprehensive energy modernisation of residential and public buildings.



Improving Ukrainian legislative framework and making it compatible with IFO procedures

1

Adopting a number of laws necessary for the effective functioning of the energy efficiency market, making legislation compatible with EU Directives, establishing the Energy Efficiency Fund (see Annex 3).

2

Development and maintenance of regulations necessary for functioning of the Laws “On Property Rights in Apartment Buildings”, “On Housing and Communal Services”, “On the Accountability of Utility Services”, “On the Energy Efficiency of Buildings”, and “On the Energy Efficiency Fund”.

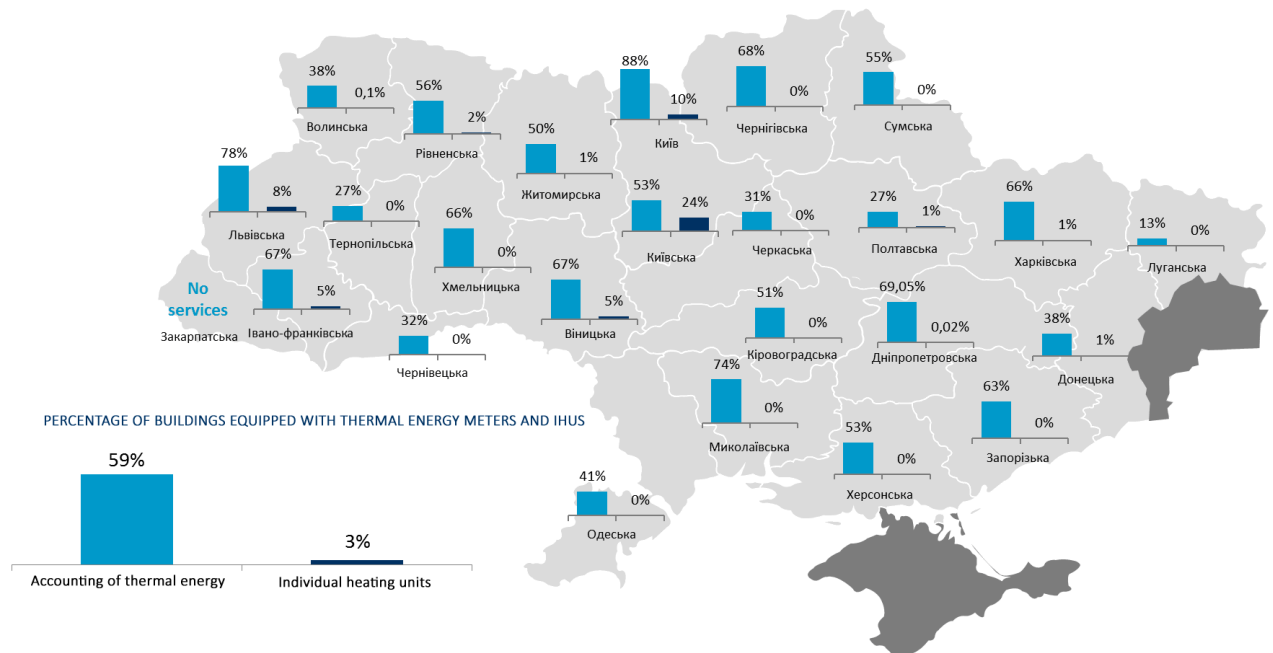


Conducting an information campaign among the general public, local authorities and other key market players to increase awareness about energy efficiency funding mechanisms.



Annexes

Annex 1. Thermal energy meters and individual heating units (IHUs) installed in different regions of Ukraine as of 01.08.2016



* If a building has an IHU installed, it is also required to have a thermal energy meter

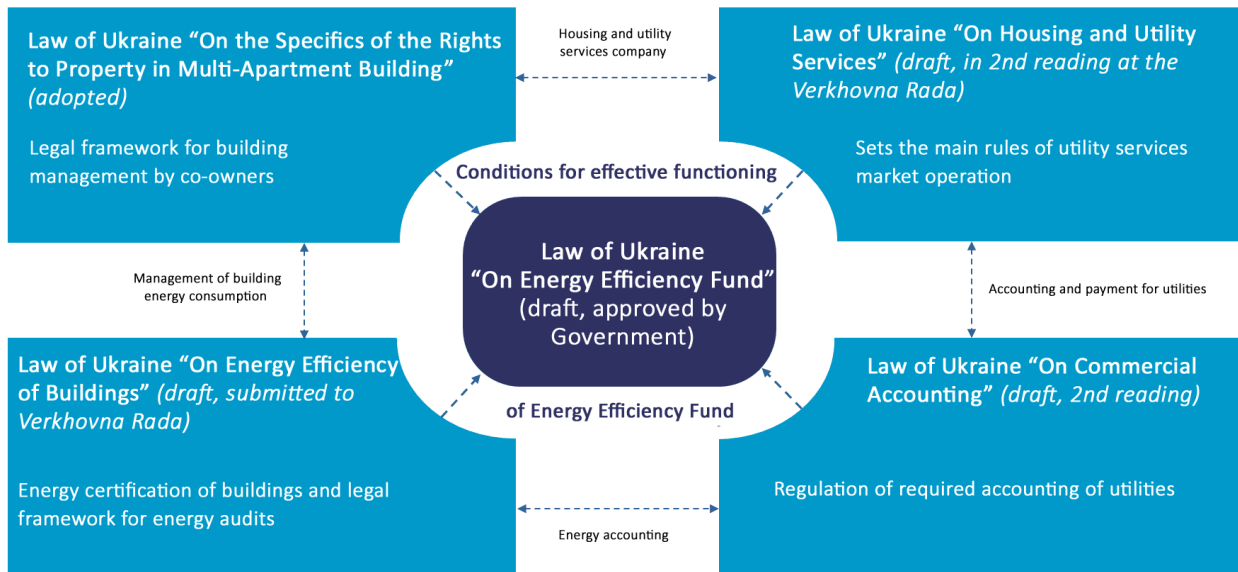
Source: Energy and Utilities National Regulatory Commission data, analysis of consultants

Annex 2. The losses of thermal energy suppliers in Ukraine in 2015

Municipal thermal energy supplier (TKE)	Supplied thermal energy, thousands of Gcal	Income, UAH million	Operational loss adjusted to rate difference, UAH million
Kryvyi Rih	865.3 (2%)	609.8 (3%)	-773.9 (25%)
Kyiv	10,350.1 (27%)	5,834.5 (29%)	-684.3 (23%)
Donetsk Region (certain towns)	778.70 (2%)	431.5 (2%)	-277.9 (9%)
Odesa	1,394.7 (4%)	857.7 (4%)	-237.1 (8%)
Kharkiv	5,271.8 (14%)	2,316.9 (11%)	-220.7 (7%)
Total for the largest 5 TKEs	18,660.6 (49%)	10,050.3 (50%)	-2,193.8 (72%)
Without Kyiv and Kharkiv TKEs	3,038.7 (8%)	1,899.0 (9%)	-1,288.9 (42%)
Total for 130 TKEs (approximately 79% of all thermal energy suppliers in Ukraine licensed by the Energy and Utilities National Regulatory Commission)	38,112.6 (100%)	20,284.6 (100%)	-3,038.3 (100%)

Source: data of the Ministry for Regional Development

Annex 3. Laws and regulations on the development of the energy efficiency market



Source: data of the Ministry for Regional Development