

APPLICATION FOR CTF PROJECT PREPARATION GRANT

A. TASK MANAGER FOR CTF FUNDING REQUEST

| | | | |
|---|-----------------------|---|--|
| Name: Dmytro Glazkov | | Position: Operations Officer, ECSSD | |
| Organization/Unit: Kyiv, Ukraine (IBRD), Energy ECSS2 | | | |
| Telephone: (+38-044) 4906671 | Fax:(+38-044) 4906670 | Email: dglazkov@worldbank.org | |

B. PROPOSAL SUMMARY

1. **Geographic Focus of Proposed Activity:**

| | |
|----------|---|
| X | Individual Country (<i>please specify</i>): Ukraine |
| | Regional or Multi-Country (<i>please specify</i>): |
| | Global |

2. **Project Title:**

| |
|--|
| Ukraine - Energy Efficiency Project (UEEP) |
|--|

3. **List of Deliverables from CTF Project Preparation Grant**

Development of Municipal Energy Efficiency Investment Portfolio and Pilot Projects

| | Deliverables |
|-------------------|---|
| Activity 1 | <ul style="list-style-type: none"> i. Municipal Energy Efficiency (EE) project pipeline screening criteria; and ii. Municipal EE project proposal template and guidelines |
| Activity 2 | <ul style="list-style-type: none"> i. Pipeline of municipal and bankable EE investment sub-projects ii. Six prepared subprojects (pilots) from three cities, including feasibility studies, energy audit reports, and proposed implementation arrangements; and iii. Recommended actions for addressing the key common and specific impediments to achieving financial closure of the prepared subprojects |
| Activity 3 | <ul style="list-style-type: none"> i. Communications plan and related information materials ii. Three regional consultation/training workshops |
| Activity 4 | Poverty and social impact assessment (PISA) report of UEEP |

C. PROPOSAL DETAILS

4. **Summary of Proposed Activities**

By submitting this CTF Project Preparation Grant Proposal, the Government of Ukraine wishes to develop an municipal energy efficiency investment portfolio and pilots to be financed by the Ukraine Energy Efficiency Project.

The grant support for the *Development of Municipal EE Investment Portfolio and Pilots* will

include four activities: (1) development of screening criteria, proposal template, and proposal guidelines for municipal EE investment projects; (2) development of a quality municipal investment pipeline and six fully prepared and bankable pilot projects, as well as concrete solutions to remove critical impediments to the implementation of pilot projects; (3) information and outreach campaign for development of municipal EE subprojects pipeline; and (4) assessment of the poverty and social impacts of UEEP.

The terms of reference (ToR) for the proposed CTF preparation grant component are provided in ANNEX II.

5. Rationale for CTF grant funding, including consistency with CTF Investment Plan:

The proposed preparation grant activities support the implementation of the EE program under the CTF Investment Plan for Ukraine and in particular the scaling-up of municipal EE financing by helping (1) identify and resolve potential implementation issues; and (2) ensure that municipal EE investments are based on sound analytical work and aligned with country priorities for poverty alleviation and social objectives. The proposed activities will also help strengthen consensus in setting and achieving Ukraine's EE target among key national stakeholders and development partners, as well as enhance capacity of concerned national agencies for policy reform and delivering results.

Ukraine has enormous potential for increasing energy efficiency, and good progress has already been made in addressing some sectors of the economy. Drawing on lessons learned in other countries in Eastern Europe and the Former Soviet Union, further progress would require access to concessional financing to address the many barriers to energy efficiency investments. GEF's energy efficiency program has demonstrated in many countries that EE investments require relatively modest financing support to succeed. The proposed CTF EE program builds on these lessons learned and would enable the scaling-up required to become **transformational** as facilitating municipal energy efficiency projects financing will open the almost untouched municipal energy efficiency improvements reserves.

Ukraine's Energy Strategy calls for more than 50% reduction in energy intensity by 2030, corresponding to energy savings of 223 million ton of oil equivalent (MTOE). About 38% of these savings (85 MTOE) would come from structural changes, as the economy shifts away from heavy industry to more service-oriented sectors, and the rest would primarily come from technical improvements in industries and buildings. To achieve this target it is estimated that about US\$20 billion needs to be invested in energy efficiency.

The CTF EE investment program is designed to address the following key barriers to scaling up EE financing in Ukraine:

- (a) **Inadequate awareness of the benefits of energy efficiency projects and their perceived high technical and financial risks.** Industry, particularly medium and large industries, may in cases perceive energy efficiency projects to be technically risky and not about commensurate financial returns, particularly when compared to the kind of financial returns expected from other investment options. Lack of familiarity with the range of energy efficiency technologies and processes, energy conservation investment

best practices as well as the under-appreciation of financial benefits from energy conservation investments are primarily responsible for the high risk perception among industrial enterprises;

- (b) **Insufficient capacity for evaluating energy efficiency projects among banks, and their perception of high financial risks of such projects.** There is a lack of adequate debt financing for such projects, primarily because banks are not familiar with such projects in Ukraine. The internal capacity for identification of such projects, their evaluation and further processing is also low as a result. In Ukraine, this is further exacerbated by the absence of financing of suitable tenor and cost – financing available in the Ukrainian market is short-term and high-cost. For industries, banks prefer new investments, or investments that raise productivity or capacity, rather than investments aimed at reducing costs or improving efficiency;
- (c) **Insufficient institutional capacity for managing the regulatory framework for energy efficiency.** The capability of the regulatory arrangements to effectively implement the Government’s energy efficiency policies and programs needs to be scaled up to meet the new challenges posed by the EE Law and the secondary regulations. This is a significant challenge, as witnessed in other countries that have embarked on the path to scaling up energy efficiency, and need significant capacity building support in initial years;
- (d) **High transaction costs in developing energy efficiency investments.** The transaction cost of developing energy efficiency investments faced by industry, municipal entities, and banks is usually high. Such costs can arise from energy audits, feasibility studies, sometimes the need to shut down processes in order to rehabilitate or replace parts. These costs are further burdened by the lack of adequate familiarity and experience with identifying and preparing such projects both within industry as well as in banks;
- (e) The **lack of financial resources and proper lending facilities**, particularly for municipal EE projects and SMEs. Financial institutions view the EE sector as higher risks, due to lack of technical capacity on the part of lenders to evaluate such projects and potential borrowers being unable to establish bankability of their projects. CTF will be instrumental in attracting the attention of the financial institutions to this new field, providing necessary know-how to help develop institutional capacity and developing a competitive market for these products
- (f) The **landlord-tenant problem** which for example occurs when the landlord is including the price for heat and power in the rent, thereby removing the incentive on the tenant to use these utilities in an efficient manner, and also the ability of the tenant to control usage through awareness of the meter readings. The reverse would be when the landlord provides energy-using appliances (such as a refrigerator or lighting systems), but the tenant pays the electricity bill. In this situation, there is little incentive for the landlord to choose the most energy-efficient appliance; and
- (g) **Additional costs and risk premiums in the sector for buildings** include (i) project preparation/ audits; (ii) monitoring and inspection of results; (iii) knowledge sharing; and (iv) the guarantees needed by banks to enter this market.

The proposed CTF investment in energy efficiency will focus on the industrial and municipal sectors – both for production and end-use measures¹. CTF resources would be used to address

¹ The needs of the other sectors are modest and thus do not require additional CTF support.

the need to buy-down the cost of EE projects to address the barriers identified above. The requested CTF grant funds will be used to prepare municipal EE subprojects for CTF financing.

6. Government Approval of Country-Specific Activities

| | | |
|---|--------------------------|----------------------------|
| Name of responsible official for CTF Grant Approval: Mr. Sergiy Orlenko | | |
| Position: Head of State Agency for Environmental Investment | | |
| Ministry/Agency: State Agency for Environmental Investment | Country: Ukraine | |
| Tel: (+38-044) 594-91-11 | Fax: (+38-044) 594-91-15 | Email: info.neia@gmail.com |

| | | |
|--|--------------------------|-------------------------------|
| Name of responsible official for Municipal EE Component: Ms. Olga Romaniuk | | |
| Position: Head of Department of International Development, Investments and Questions of European Integration | | |
| Ministry/Agency: Ministry of Regional Development, Construction, Housing and Communal Economy of Ukraine | Country: Ukraine | |
| Tel: (+38-044) 207-19-26 | Fax: (+38-044) 207-18-97 | Email: O.P.Romanyuk@gmail.com |

D. IMPLEMENTATION AND FINANCING PLAN

7. Implementation Approach

Executing Agency for Development of Municipal EE Investment Portfolio and Pilot Projects:

This assignment will be managed by the Ministry of Regional Development, Construction, Housing and Communal Economy of Ukraine (MoRDCHC). The direct client is UkrEximBank, the implementation agency of the World Bank's energy efficiency line of credit. Guidance and advice from the State Agency of Ukraine for Efficient Use of Energy Resources will be sought for the successful completion of this assignment. There will be close coordination with UkrEximBank throughout the implementation of this assignment so as to ensure that prepared subprojects reach financial closure.

The consultant, with assistance of MoRDCHC, SAER, will coordinate work with parallel efforts in municipal EE sub-project development funded by USAID and ESMAP financed Ukraine District Heating Study. In cities included in the USAID District Heating Reform Project, the development and preparation of municipal EE investment subprojects will draw on the knowledge and resources from the USAID-funded studies including, specifically, making full use of the investment-grade energy audits funded by USAID.

Procurement: Procurement of consultancy services will be in accordance with the International Bank for Reconstruction and Development *Selection and Employment of Consultants*, January 2011, using the relevant Bank standard procedures and documents. The process for selecting firms shall be through Quality and Cost-Based Selection (QCBS) or other methods as agreed with the Bank. For individual consultants, the selection method shall be through the IBRD procedure for the selection of individual consultants. All eligible

consultants, who wish to provide the required services, may express their interest to be short-listed. For contract with Firms, the Borrower shall advertize a request for expressions of interest (REOI) in the national gazette or in a newspaper or magazine of national circulation or in a widely used electronic portal with free access. In addition, for contracts valued at more than US\$300,000, advertisement of the REOI must be placed on the UNDB online website. Auditors will be procured using Least Cost basis.

Disbursement: Disbursement of grant funds will be made via Designated Accounts or by direct payments. Designated account will be opened for MoRDCHC. This Designated Account will be opened solely for the purpose of this Grant, and the accounts will be established in a local bank acceptable to the Bank. UAH accounts (transit accounts) may be also opened to facilitate for payments in local currency.

Financial Management: A Bank FM Specialist will conduct an assessment of MoRDCHC to ensure that their respective FM systems are in established, functioning and ready for implementation of the grant. MoRDCHC will need to appoint a FM/disbursement specialist who will be responsible for the complete range of financial management functions (budgeting, disbursement, accounting, and reporting) for the grant. The MoRDCHC is currently implementing another project, and the expertise from implementation of that project can be used in implementation of this grant. MoRDCHC will also be required to maintain an adequate financial management for executing grant activities and grant funds. Additionally, at least one annual FM supervision will be conducted during implementation of the grant, to ensure continuous compliance with the Bank's FM policies and requirements.

Reporting and Auditing Given the relatively small size of the grant, semi-annual interim un-audited financial reports (IFRs) will be prepared throughout the implementation period of the grant. Furthermore, the Executing Agencie (MoRDCHC) shall prepare and furnish to the IBRD, on a quarterly basis, progress reports in form and with substance acceptable to the Bank. These reports will outline the progress made in project implementation, including procurement, highlight the difficulties faced and recommended actions and present a statement of expenditure of the Grant resources. The financial statements of the grant will be audited at least once during for the period of grant implementation - unless the implementation period exceeds 18 months, such that a second may be required. A private sector audit firm will be contracted, based on TORs acceptable to the Bank, to audit the grant. The cost of the audit(s) will be financed as eligible grant expenditures.

8. Implementation Schedule: *beginning and end dates, as well as major activity milestones.*

| Development of Municipal EE Investment Portfolio and Pilots | | |
|---|--|---|
| | Deliverable | Timeline (from commencement of work) |
| Activity 1 | <ul style="list-style-type: none"> i. Municipal Energy Efficiency (EE) project pipeline screening criteria; and ii. Municipal EE project proposal template and guidelines | Drafts: 2 weeks Final drafts: 4 weeks |
| Activity 2 | <ul style="list-style-type: none"> i. Pipeline of municipal EE investment sub-projects ii. Fully prepared subprojects (pilot proposals) from three cities, including feasibility studies, energy | Initial list: 10 weeks Final list: 26 weeks Pilot proposals: 24 weeks |

| | | |
|-------------------|--|--|
| | audit reports, and proposed implementation arrangements; and iii. Recommended actions for addressing the common and specific impediments to achieving financial closure of the prepared subprojects | Draft action plan: 12 weeks Final draft action plan: 16 weeks |
| Activity 3 | i. Communications plan and related information materials ii. Three regional consultation/training workshops | Plan and materials: 8 weeks Workshops delivered by: 16 weeks |
| Activity 4 | Poverty and social impact assessment (PISA) report of UEEP | Draft: 10 weeks Final draft: 14 weeks |

9. Financing Plan:

| Major Components | CTF Request (US\$) | Co-financing | | Total Cost (US\$) |
|------------------------------|-----------------------|---------------|-----------------------|----------------------|
| | | US\$ | Source | |
| Activity 1 | 20000 | | | 20000 |
| Activity 2 | 650000 | 50 000 | Government In kind | 700000 |
| Activity 3 | 200000 | | | 200000 |
| Activity 4 | 100000 | | | 100000 |
| Project Audit | 30000 | | | 30000 |
| Total Financing/Costs | 1 000 000 | 50 000 | | 1 050 000 |

Note: See Annex I for Detailed Budget

E. SUPPLEMENTARY INFORMATION AND MATERIALS

10. Additional Information:

In addition to the project preparation activities financed by the grant, the EC, USAID, IFC, EBRD and EIB will finance supplementary project preparation activities. It is envisioned that some of the investment-grade audits may be performed by parallel efforts of the USAID-funded District Heating Reform Project. *European Union*: will also provide funds for two *energy sector support programmes* covering budget support and TA: the first one to support Ukraine's Energy Strategy implementation; and the second one on Energy Efficiency which raises the importance of the country's energy balance establishment. For Energy Efficiency Program EC will provide EURO 7 mln.

ANNEX I: Detailed Budget

Development of municipal EE investment portfolio and pilots

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--------------|--|-------------------------------|-----------|--------|--------------------------------|-----------------|
| Activity | Deliverable | Timeline | Work-days | People | Cost per Person per Day (US\$) | Total* |
| | | (from commencement of work) | | | | |
| 1 | i. Municipal Energy Efficiency (EE) project pipeline screening criteria; and ii. Municipal EE project proposal template and guidelines | Drafts due: 2 weeks | 20 | 1 | 1,000 | 20,000 |
| | | Final drafts due: 4 weeks | | | | |
| 2 | i. Pipeline of municipal EE investment sub-projects | Due: 10 weeks | 140 | | | 650,000 |
| | ii. Fully prepared six subprojects (pilot proposals) from three cities, including feasibility studies, energy audit reports, and proposed implementation arrangements; and | Due: 26 weeks | | | | |
| | iii. Recommended actions for addressing the key common and specific impediments to achieving financial closure of the prepared subprojects | Due: 16 weeks | | | | |
| 3 | i. Communications plan and related information materials | Due: 8 weeks | 40 | | | 100,000 |
| | ii. Three regional consultation/training workshops | Workshops Delivered: 16 weeks | 40 | | | 100,000 |
| 4 | i. Poverty and social impact assessment (PISA) report of UEEP | Draft due: 10 weeks | 80 | | | 100,000 |
| | | Final draft: 14 weeks | | | | |
| Audit | | | | | | 30,000 |
| TOTAL | | | | | | 1000,000 |

*Training, translation and publishing will be covered and estimated at no more than 10% of total costs

ANNEX II-A: Summary of Draft Terms of References of Consulting Services for Development of Municipal EE Investment Portfolio and Pilots

Background: Scaling up commercial financing for energy efficiency investments in Ukrainian cities require overcoming two critical barriers: the lack of well prepared and bankable projects which are ready for financing and the credit risk associated with beneficiaries of municipal energy efficiency projects².

As part of the World Bank's energy efficiency financing program in Ukraine, the Clean Technology Fund has provided a grant to support activities addressing the aforementioned barriers. These Terms of Reference (ToR) define the objective, scope of work, deliverables, and implementation arrangements for the development, preparation and risk mitigation of municipal energy efficiency projects to be financed under the World Bank's energy efficiency financing program.

Objective: The development objective of this assignment is to scale up the financing and implementation of municipal energy efficiency projects in Ukraine.

Scope of Work:

The main activities under this assignment include:

Activity 1: Development of screening criteria, proposal template, and proposal guidelines for municipal EE investment projects

Following international best practices, the consultant will propose the basic criteria for selecting EE investment subprojects in district heating, public lighting, public buildings, and residential buildings.³ The criteria should draw on guidance from UkrEximBank, SAER, MoRDCHC and the World Bank. Based on the identified criteria, the consultant will prepare a standard template for municipal EE sub-projects proposal, as well as guidelines for preparation of proposals.

The task envisions that one local consultant with extensive experience in energy efficiency field will develop the screening criteria and standard proposal template. The consultant will consult all the necessary stakeholders (e.g., MoRDCHC, UkrEximBank, SAER, etc)

Activity 2: Development of a quality municipal investment pipeline and pilot projects, as well as concrete solutions to remove critical impediments to the implementation of pilot projects. This will involve the following specific tasks:

- Solicitation and screening of municipal EE sub-projects proposals from municipal entities and private-sector proponents

² Examples of municipal energy efficiency projects include improving efficiency of municipal utilities, improving efficiency of street lighting, improving energy efficiency of residential and public buildings, etc. Beneficiaries of municipal energy efficiency projects may include municipal governments, budget-supported entities, communal service companies, and condominium associations

³ Water and sanitation sector is not covered because there is a separate and on-going World Bank project providing funds for energy efficiency investments in water and sanitation companies Ukraine.

The consultant, in consultation with MoRDCHC, SAER and UkrEximBank, will launch nationwide information and outreach campaign to solicit municipal EE investment proposals, focusing on cities where USAID is implementing its district heating reform technical assistance project. The proposals will be cataloged in a project database so they can be sorted by oblast, subsector, type of proponent, and size of proposed financing.

- Identification of municipal EE sub-projects pipeline and three cities for pilots preparation

Following the developed criteria, the consultant will screen and establish a pipeline of municipal EE sub-projects. In consultation with MoRDCHC, SAER, UkrEximBank, and concerned municipal governments, the consultant will identify three cities where pilot projects will be prepared for financing under the World Bank's Ukraine Energy Efficiency Project (UEEP). The four cities in principle should overlap with USAID project's priority cities and three cities selected for ESMAP Financed District Heating Study.

- Preparation of six bankable municipal EE investment pilots in the three selected cities

This includes preparing detailed feasibility studies, conducting necessary investment grade energy audits (the USAID project has an energy audit component which support investment grade energy audits and should be utilized to the extent possible), and proposing implementation arrangements amenable to project beneficiaries and UkrEximBank. The consultant is expected to prepare at least two pilot project in each of the three selected cities and a total of six fully prepared projects.

- Recommend practical solutions to critical impediments to achieving the financial closure of the proposed pilots.

The consultant relying on local expertise (e.g., financial advisers, lawyers, etc with extensive experience in banking sector and legal issues in Ukraine) will identify common and specific constraints and risks that may prevent the pilot projects from reaching financial closure under UEEP and recommend practical solutions to remove the impediments to allow the pilots to proceed and to suggest concrete measures which will enable the replication and scale up of the pilots. This task will require close cooperation with UkrEximBank and other financial institutions that could potentially finance municipal EE sub-projects.

The task envisions that the consultant (firm) will work closely with USAID. 3 cities will be selected based on work completed by the Bank (e.g., DH AAA) and USAID in close consultations with the Government. The consultants will prepare at least 6 projects.

The task assumes that local consultants (e.g., financial advisers, lawyers, etc with extensive experience in banking sector and legal issues in Ukraine) will identify specific risks that prevent the prepared project from being implemented and suggest specific solutions and policy reforms to make the projects implementable/viable.

It is expected that the preparation of potential projects will cost about US\$ 215,000 per city or roughly US\$ 110,000 per project.

Activity 3: Information and outreach campaign for development of municipal EE subproject pipeline.

This activity is closely associated with Activity 2 and includes an initial outreach to municipalities to develop preliminary list of subprojects, development of a communications plan and related information materials, and targeted consultation and training workshops to help prospective municipalities prepare subproject proposals.

The task envisions that after the prepared projects start being implemented and preliminary results are achieved, the consultant will develop outreach campaign to disseminate the achieved results

Activity 4: Assessment of the poverty and social impacts of UEEP

The consultant will engage the civil society to assess the poverty and social impacts of UEEP.

The consultant is expected to supplement the proposed Action plan with Poverty and Social Impact Analysis in order to understand the impact for the suggested reforms. Also, for successful Action plan implementation the consultant is expected to engage civil society.

Deliverables:

The deliverables under each activity and a rough timeline of the deliverables are summarized in the table below.

Budget

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--------------|---|-------------------------------|-----------|--------|--------------------------------|-----------------|
| | Deliverable | Timeline | Work-days | People | Cost per Person per Day (US\$) | Total* |
| | | (from commencement of work) | | | | |
| Activity 1 | i. Municipal Energy Efficiency (EE) project pipeline screening criteria; and | Drafts due: 2 weeks | 20 | 1 | 1,000 | 20,000 |
| | ii. Municipal EE project proposal template and guidelines | Final drafts due: 4 weeks | | | | |
| Activity 2 | i. Pipeline of municipal EE investment sub-projects | Due: 10 weeks | 140 | | | 650,000 |
| | ii. Fully prepared subprojects (pilot proposals) from four cities, including feasibility studies, energy audit reports, and proposed implementation arrangements; and | Due: 26 weeks | | | | |
| | iii. Recommended actions for addressing the key common and specific impediments to achieving financial closure of the prepared subprojects | Due: 16 weeks | | | | |
| Activity 3 | i. Communications plan and related information materials | Due: 8 weeks | 40 | | | 100,000 |
| | ii. Three regional consultation/training workshops | Workshops Delivered: 16 weeks | 40 | | | 100,000 |
| Activity 4 | i. Poverty and social impact assessment (PISA) report of UEEP | Draft due: 10 weeks | 80 | | | 100,000 |
| | | Final draft: 14 weeks | | | | |
| Contingency | | | | | | 30,000 |
| TOTAL | | | | | | 1000,000 |

*Training, translation and publishing will be covered and estimated at no more than 10% of total costs

Implementation Arrangements:

This assignment will be managed by the Ministry of Regional Development, Construction, Housing and Communal Economy of Ukraine (MoRDCHC). The direct client is UkrEximBank, the implementation agency of the World Bank's energy efficiency line of credit. Guidance and advice from the State Agency of Ukraine for Efficient Use of Energy Resources (SAER) are essential for the successful completion of this assignment. There will be close coordination with UkrEximBank throughout the implementation of this assignment to ensure that prepared subprojects reach financial closure.

The consultant, with assistance of MoRDCHC, will coordinate work with parallel efforts in municipal EE sub-project development funded by USAID. In cities included in the USAID District Heating Reform Project, the development and preparation of municipal EE investment subprojects draw on the knowledge and resources from the USAID-funded studies including, specifically, making full use of the investment-grade energy audits funded by USAID.

ANNEX III. Project Context

1. **The Government of Ukraine (GoU) has made it a strategic priority to reduce Ukraine's energy intensity.** In 1996, the GoU developed an Energy Efficiency Program, where it outlined its strategy of decreasing energy consumption in industrial, energy and housing. However, the 1996 Energy Efficiency Program was not strictly enforced as it was not accompanied by an enforceable energy efficiency action plan. In its 2006 Energy Strategy, the GoU set a target of improving Ukraine's energy intensity by 50% by 2030. In 2010, the National Agency of Ukraine for the Effective Use of Energy Resources (NAER) developed a Targeted Energy Efficiency Program, which was approved by the Cabinet of Ministers. The Program sets a target of decreasing energy intensity of Ukraine's economy by 20% by year 2015. NAER is following this up with the preparation of a complementary National Energy Efficiency Action Plan (NEEAP). The NEEAP is designed to identify energy efficiency investments, barriers to implementation and agencies responsible for implementation.

2. **The industrial sector, particularly heavy industry, is expected to be one of the primary sources of energy savings.** Roughly 41% of all Ukrainian steel (15.3 million tons) is produced using open hearth technology which has been replaced in nearly every country in the world except for Russia which is in the process of replacing these assets. Blast furnaces or electric arc furnace technology would reduce energy consumption per unit of output by more than four-fold. Other sectors such as the chemical, agricultural and food production sectors are equally estimated to have significant energy savings potential.

3. **The heating needs in Ukraine are also expected to be a considerable source of energy savings at the municipal level.** Building energy efficiency is estimated to be about 2-3 times worse than in Western Europe. The demand-side issues are exacerbated by supply-side energy losses, with pipeline losses nearly double that of Western European practices; and existing boilers are about 20% less efficient than new boilers. Issues that need to be addressed to correct these problems are complex, both from a social and political perspective. Heating prices are typically less than half of comparators elsewhere as price setting is politicized. As a result of low prices, district heating systems have not been modernized. The Government has taken the first steps at depoliticizing price setting for district heating by transferring the responsibility for setting district heating prices to the National Energy Regulatory Council (NERC) as of mid-2010. [District heating prices were increased by 30% in December 2010 helping establish the incentive for decreased use of energy in buildings through temperature controls, insulation and sealing building structures.]

4. **Lessons learned from successful EU-12 countries indicate energy efficiency investments in the industrial sector as the top priority, followed by the building stock.** However, many industries don't invest in energy efficiency. Ukraine's heavy industry sector has had many natural advantages: availability of iron ore nearby; low labor costs; and low energy. However, these comparative advantages are changing rapidly. Although labor costs remain low, so is productivity with many steel mills employing thousands of more people per ton of production than in other countries. Energy costs have accelerated rapidly in the past four years, rising nearly four-fold; and the asset base is old and in need of replacement, requiring considerable new

investments. The problem has been made more complex in the past two years as the fiscal/economic crisis has made unemployment more acute as well as funding for new investments scarce. Lending of IFI loans through FIs has also come with its own constraints, including: restricting focus to export industries; focusing exclusively on Small and Medium Enterprises and limiting resource flows to specific sectors.

5. Energy efficiency improvements in District heating (DH) in Ukraine remains a difficult problem because of the low prices and the socio-political problems that revolve around heat supply to buildings. In parallel, the Government is addressing the policy reform agenda, starting with the depoliticization of DH prices. USAID-funded consultant are working in 34 cities, of which 6 are fast-tracked, to prepare district heating projects. The World Bank is conducting an ESMAP-funded study to conduct an in-depth analysis of the binding constraints to municipal creditworthiness for energy efficiency investments and to identify viable financial options, such as the promotion of Energy Service Company (ESCO) models. However, the credit-worthiness of potential borrowers remains a problem that is expected to be addressed as this project develops, using grant funds from CTF in parallel to existing technical assistance programs from the European Commission, USAID and the Swedish International Development Cooperation Agency (SIDA). It is expected that pilot projects in cities which have sufficient borrowing capacity, adequate tariffs and collateral arrangements will be identified for implementation under this project. Such projects could be scaled-up at a later date once the systemic policy and regulatory constraints to the creditworthiness of municipal borrowers have been removed. The initial target for building improvements should be new construction as the cost of making a new building energy efficient is modest – less than 5% of the capital cost – while many energy efficiency elements of reconstruction of existing buildings would require subsidies.

6. The project development objective is to contribute to improved energy efficiency by industrial and commercial companies, municipalities, municipally-owned enterprises and Energy Service Companies by facilitating sustainable financial intermediation for the financing of energy efficiency investments.

7. The indicators are proposed as follows:

- a. For energy efficiency projects: Extent of savings in energy consumption (toe) for end-users and municipalities;
- b. For FI and participating banks (PBs): Increased lending for energy efficiency projects by UEB and PBs.