

Final Evaluation Report
Barriers to GHG Emissions Mitigation through Energy Efficiency in District Heating Systems - Phase 2

Report submitted at the request of:

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and the Phase 2 Project Management Unit
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Foreword

This draft report provides the UNDP with findings, ratings and recommendations based on desk review documents, interviews, site visits and several meetings with the managers of the Project Management Unit and the project beneficiary ESCO-Rivne. The evaluation team conducted its site visit in Ukraine (Kiev and Rivne) from June 13 up to June 26, 2010.

The Final Evaluation team presented its main findings, preliminary ratings and recommendations to the UNDP during the final debriefing meeting held in Kiev on June 25. The Country Director, Program Officer and Project Manager took part in the final debriefing meeting. In addition, the Evaluator obtained comments from the Regional Advisor through conference calls and emails. Some of these comments have been taken into consideration in preparing the Draft Report.

The Evaluator is pleased to mention the excellent collaboration of all parties involved and the transparency in regards to the information and data made available.

However the reader should keep in mind that the scope of Final Evaluation deals with the UNDP/GEF project as driven by the PMU established for that purpose, but does not include the evaluation of ESCO-Rivne as a company per se. At the same time, the evaluation team cannot avoid reviewing the actual efforts and results achieved toward project objectives and expected impacts in terms of sustainability and replication of the new business model the UNDP/GEF project supported over the last 8 years. Since ESCO-Rivne is a major output of the UNDP/GEF project, the performance of ESCO-Rivne has a direct impact on the overall project evaluation.

Finally, because of the low rating related to the replication approach and result, which have a direct impact on the whole sustainability of the new business model, the evaluator was required to pay very close attention to these issues with the purpose of recommending the appropriate actions (see Recommendations). The evaluator got the feeling that these key points (sustainability and replication) are of the utmost importance and should be addressed now, although the project is coming to its end.

1. Executive Summary

1.1 Brief Description of Project

In line with the Government's priorities, this project addresses a key issue in the reduction of greenhouse gas emissions through large-scale improvements in energy efficiency in Ukraine's communal heat supply sector. The project objective is to reduce the overall consumption of fossil fuel and associated greenhouse gas (GHG) emissions by removing the barriers to supply and demand side energy efficiency improvements in the district heating systems in the main cities of Ukraine. GEF participation will reduce the major existing barriers in one pilot city and provide for the replication of defined approaches and measures in the other main cities of the country.

The four primary outcomes of the project are summarized below:

Outcome 1: ESCO operations are expanded to cover Rivne City-Wide/Oblast energy efficiency activities.

Outcome 2: ESCO-Rivne operations are facilitated through the financing of activities with long payback periods.

Outcome 3: A reduction of the investment risks in order to facilitate ESCO-Rivne's expanded activities.

Outcome 4: Project experience/best practices and lessons learned are replicated throughout Ukraine and in other CIS countries.

1.2 Context and Purpose of the Evaluation

The overall purpose of the evaluation is to measure the effectiveness and efficiency of project activities in relation to the stated objectives endorsed by the GEF, including any agreed upon changes in the objectives during project implementation and any other results.

The terminal evaluation has the following complementary purposes:

- a) To promote accountability and transparency, and to assess and disclose levels of project accomplishment;
- b) To synthesize lessons learned that may help improve the selection, design and implementation of future GEF activities.
- c) To provide feedback on issues that are recurrent across the portfolio and need attention and on improvements regarding previously identified issues.

1.3 Main Conclusions, Recommendations and Lessons Learned

In general, the major activities related the project implementation process, financial management and level of achievement towards the objectives are **marginally unsatisfactory**. The project is adequately managed in accordance with UNDP regulations, and the PMU team members are capable and fully dedicated to the implementation of the project toward objectives defined in the Project Document prepared some years ago. However, as a rule, the project team members were far too technically-oriented and not sufficiently financially-oriented. Such a situation surely impacted on the overall project rating.

The project design has been evaluated as appropriate to address, in a timely fashion, the issues of institutional and financial barriers within the project timeframe even though the evaluator has some reservations related to the "Grant" Investment Scheme carried out by the project in line with the Project Document. The direct grant investment scheme implemented in accordance with the Prodoc is probably the major reason why the project did not perform in regards to replication of the ESCO business model.

On the other hand, the evaluation team pointed out significant weaknesses, especially in terms of EE project replication funding (effort and actual), the sustainability of the ESCO business model for implementing long-term payback period projects, the municipal sector's regulation framework and the financial profitability of the EE investment projects implemented in Phase 2.

1.3.1 Sustainability and Extended Outcomes

Sustainability : Unlikely Sustainable		
Indicator	Rating	Comments
1.Capacity Building ESCO and Energy End-Users	Likely Sustainable	<i>Negligible risks that affect this dimension of sustainability. Key staff members have been working full-time and the staff turnover has been very low for the last 5 years. Technical and equipment operation staff members' capacity seems geared to fit with the requirements. However, there is still a lack in regards to Business Development and Resource Mobilization, which have not been appropriately covered by the project. In the same way, although the ESCO is familiar with Energy Performance Contracting, it did not develop the right business opportunities to implement EPC and learn more about it by doing so.</i>
2.Technology Improvements	Likely Sustainable	<i>Long life cycle of modern and efficient equipment, best practices of Operations and Maintenance</i>
3. Energy Management Best Practices.	Likely Sustainable	<i>Baseline, accurate metering equipment, reliable monitoring and evaluation procedures and operations staff are appropriately trained in regards to Energy Management Best Practices in District Heating (boiler operation and distribution systems)</i>
4. Energy Savings	Likely Sustainable	<i>Stable and secured over the equipment life cycle (20 years). The total energy savings within the project timeframe are 760,000 M³ gas or 880 kTEC (equiv. coal). The total savings on the project life cycle: 2,440,000 M³ gas or 2,830 kTEC.</i>
5. Money Savings (direct and post-project)	Likely Sustainable	<i>Fairly secured income stream and likely financial benefits growth over the equipment life cycle (20 years). A certain uncertainty in regards to securing net incomes because the gas pricing is unstable. The amortizing period for these "Chauffage Contracts" is between 6 and 10 years. The ESCO makes profits and pays income taxes but because of the regulation limiting the profit margin to 12%, the incentive to increase the project-based money savings is limited by the regulation. In other words, the money savings are LIKELY SUSTAINABLE, but could be much better if the ESCO could secure a significant share of the savings. In accordance with the current "business model", the money savings are mainly transferred though low tariffs to energy end-users (municipal sector) rather than to the ESCO during the payback period. However, the financial results from boiler plant operation activity (included in the total financial results) are as follows: income 5,463,900.00 UAH, net income: 4,553,250.00 UAH, net cost of operation: 4,105,800.00. The estimated profit was "eaten up" by the administrative and other operational costs (office rent, office operation) – in total 744,100.00 UAH included in the expenses under boiler plant operation activity.</i>
6. Direct (and post project) GHG Emissions Reduction or Avoided	Likely Sustainable	<i>Stable and secured over the equipment life cycle (20 years). The total GHG emissions reduction or avoided over the project timeframe: 15 kton CO₂. Over the project life cycle (20 years), the direct GHG emissions reduction is 48 ktonCO₂. As a result, the cost per ton of GHG emissions avoided is about US\$110. It is SUSTAINABLE</i>

		<i>but quite expensive. For most of GEF projects, the cost should be under US\$20 per ton.</i>
7. Indirect GHG emissions reduction or avoided	Moderately Sustainable	<i>An ESCO standard project influence period for the GEF effects has been assumed to be 10 years in accordance with GEF/33/Inf guidelines. The replication factor considered is 2 for an ESCO project. The replication factor is low because project replication has been evaluated unsatisfactory as a result of the clear weakness in terms of successful resource mobilization and effort. In addition, because of the low number of projects achieved within the current Phase 2 (3 projects completed), the replication factor can be 2 or 3, but 2 is more realistic (in accordance with the bottoms-up approach. In the absence of financial support from ODA or a significant investment program, the business model cannot be replicated in other oblasts. Since the project did not make data available related to other projects implemented outside Rivne Oblast, the estimated indirect impact is lower than if the national potential (top-down) had been considered. The direct and indirect impacts, in accordance with the bottoms-up calculation is 96 ktCO₂. Because of such an indirect impact, ESCO-Rivne or another will be required to invest about 6 million USD. The current lack of investment capital leads to rate the likely indirect emissions reduction as MODERATELY SUSTAINABLE.</i>
8. Sustainability of the ESCO as a Business Model in the Municipal Sector	Moderately Unlikely	<i>The ESCO business model is appropriate in the municipal sector if the ESCO addresses actual needs related to short- or mid-term investment payback periods through the Energy Performance Contracting (EPC) scheme. Until now ESCO-Rivne acted as a Public Utility rather than an ESCO using EPC. For the last 5 years, about 50 ESCOs have been established in Ukraine and 5 of them were established in the municipal sector. However, one can say that, in the absence of a financial mechanism to support the ESCO business model (investment credit lines or loan guarantee fund, or others), the sustainability of that business model is Moderately Unlikely in Rivne as well as in other municipalities. If nothing changes, and if the ESCO is not in a position to fund new projects, the sustainability will shift to UNLIKELY SUSTAINABLE.</i>
9. Sustainability of the Investment Scheme	Unlikely Sustainable	<i>The ESCO business model implemented within the UNDP project framework addressed EE improvements related to district heating (supply and distribution). The range of investments required to implement these projects goes from 50,000 up to 1,000,000 USD and the payback period is quite long, about 8 years and longer. In addition, because of the nature of these projects, ESCO-Rivne has been required to manage its investments in accordance with the "Chauffage Contract" scheme rather than Energy Performance Contracting. In other words, the ESCO has been involved as a district heating utility company rather than an energy efficiency service provider. Such an implementation scheme requires a long-term investment capacity that ESCO-Rivne has not mobilized until now.</i>
10. Sustainability of Social and Gender Benefits	Likely Sustainable	<i>The impacts on the final beneficiaries, that is to say the end energy users are very significant: (i) reduction of childhood sickness rates due to the provision of quality hot water and heat supply; (ii) enhanced quality of life for around 300,000 people, including a 805-bed municipal</i>

		hospital (750 out-patients per day) servicing 54,700 Rivne residents, a 150-bed maternity hospital (200 out-patients per day), permanent hot water supply to 100,000 people, improved cold water supply to 40,000 people.
Replication: <i>Unsatisfactory</i>		
11. The ESCO Business Model Replication Scheme (potential) countrywide and within the CIS: Institutional Framework Arrangements	Unsatisfactory	<i>In terms of the institutional and management arrangements in the municipal sector, the project delivered in accordance with expectations and toward the development objectives in the Rivne area. The institutional arrangement between ESCO-Rivne, existing district public utilities (all municipally owned) KommunEnergiya, the Oblast's DH Enterprise and MiskSvitlo, the Municipality's lighting company, and the Municipal Council is still fruitful. A similar company scheme (another ESCO in another oblast) can be implemented in other oblasts on the condition that the constraints related to project financing be addressed and the appropriate financial scheme be in place at the earliest stage. Until now, the project did not successfully develop the needed financial instruments for replicating EC projects or the whole ESCO business model in other oblasts. Practically speaking, the project did not implement the actual ESCO business model. The implemented model is more similar to a utility company rather than an ESCO.</i>
12. ESCO-Rivne Corporate Management Arrangement	Marginally Satisfactory	<i>The municipal scheme is Marginally SATISFACTORY in terms of stakeholders' involvement, but there is a perverse effect: because of the regulation on ODA, ESCO-Rivne did not benefit of the same tariff as other district heating companies. The tariff (heating season 2009-2010) is lower by about 36% for the energy supply to public and other municipally owned facilities. During the previous heating season (2008-2009), the situation was worse since the tariff was 45% lower. Such a situation is a result of the regulation (TA provided through ODA scheme) that doesn't enable the energy supplier to take into consideration equipment depreciation as a cost because the equipment was in the form of a grant from UNDP/GEF. The tariff should have been about 25% higher in a situation where the tariff structure would have included the standard depreciation in line with accounting rules. Negotiations are in progress and the Municipal Council agreed to increase the tariff (in 2010-2011) for the purpose of reducing the gap. In addition, because the tariff is set by a municipal regulation (in line with the national one), the profit margin allowed is limited to 12%. In other words, the more the ESCO saves, the less money it gets.</i>
13. ESCO-Rivne Activity Expansion out of Rivne Oblast	Unsatisfactory	<i>Despite some significant efforts, the ESCO-Rivne is hardly acceptable to other municipalities out of the Rivne Oblast, except to provide technical advice and project design. However, since the replication causality factor is high, the ESCO-Rivne business model should result in a long run in positive impacts in other municipalities. Taking into consideration the lessons learned over the last 7 years, ESCO-Rivne should focus on investment projects within the Rivne Oblast and market its technical services to other oblasts. The rating is UNSATISFACTORY because the model is not the one the UNDP expected.</i>
14. Replication of financing and Investment Scheme	Unsatisfactory	<i>DH improvements need capital-intensive investments, a continuous financial resource mobilization effort and a structured business development activity. From the</i>

		<p>earliest stage of project implementation, this point has been considered as a priority but, in practice, there are no tangible results although some efforts have already been made. Up to now, ESCO-Rivne did not attract any project financing from the financial institutions towards debt and equity financing, third party investor or from a long-term equipment supplier partnership or simply through a leasing agreement. The evaluator must mention that the current economic context in Ukraine over the last years (the very high interest rate did not enable cost-effective project financing through long-term debts or commercial credits on the national market). The upcoming assets transfer ownership from the UNDP-GEF to ESCO-Rivne should improve its capacity to deal with resource mobilization in the near future, especially with NEFCO or other development funds willing to become involved in that field. In addition, ESCO-Rivne did not outline a Resource Mobilization Business Plan and has not yet proceeded with a financial audit with the purpose of rating the company and its assets in accordance with international standards. The issue related to the equipment depreciation rate to set the tariff should have been reviewed by some highly qualified lawyers involved in public procurement and the municipal sector. Finally, the way the municipality dealt with the transfer of 6% (included in the 10% reserved for ESCO employees) is not in accordance with the objective, which was to increase the motivation of the most active employees. The transfer of 6% to an external stakeholder is actually questionable and it is surely not the best decision made by the municipality (see Asset Transfer Recommendation). Because of its poor performance in mobilizing the minimum financial resources, other than from ODA (UNDP-USAID-Japan), and in the questionable transfer of shares from employees to an external stakeholder, the rating is UNSATISFACTORY.</p>
15. Technology Replication	Satisfactory	<p>Good quality equipment, appropriate schedules of maintenance, good adequacy of ESCO-Rivne's staff's technical capacity in regards to efficient equipment operations are major assets (project outputs) essential to successfully develop such an investment and service company. On the other hand, the project did not address improvements to energy demand side management. EE projects on the demand side are not so capital-intensive and the payback period is actually shorter than that of energy supply projects. The evaluation team rates technology replication as only SATISFACTORY because what has been accomplished (supply side) has been well done but because the project did not carry out EE projects on the demand side, technology replication is still limited to the equipment installed for energy supply.</p>
Project Formulation: Marginally Satisfactory		
16. Conceptualization/Design Relevance and Implementation Approach	Unsatisfactory	<p>Basically the concept of investing most of the financial resources for direct investments was not appropriate, although there is no doubt about the usefulness and relevance of Phase 2. The project concept related to direct equipment procurement financing is quite questionable. The budget provision for direct investments has been overestimated while the provision for technical assistance, on the national level and international level as well, has</p>

		<i>been underestimated. Because of the mandatory procedures for purchasing, the PMU has been required to spend significant effort and time for dealing with procurement rather than establishing the financial mechanism and looking for project partners and investors. The PMU hired a procurement agent only after the MTE as a result of a recommendation by the MTE.</i>
17. Country-Ownership/Driveness	Highly Satisfactory	<i>Taking into consideration the municipal authority's sound involvement in terms of the company's ownership and its role as investment decision facilitator (especially for budgeted municipal institutions), and considering the total investment in the project's equity (\$212,000 as opposed to the overall project target of \$250k), the municipal sector's ownership and driveness have been rated HIGHLY SATISFACTORY</i>
18. Stakeholders Participation	Highly Satisfactory	<i>Mainly because of the sound involvement of the municipal authority at all levels in the Rivne area and other oblasts, and the willingness, not to say eagerness, of other budgeted municipal institutions to embark on the ESCO scheme promoted by Phase 2, the stakeholders' participation has been rated HIGHLY SATISFACTORY.</i>
19. Replication Approach	Marginally Unsatisfactory	<i>The financial context is still unfavorable to borrow on the domestic market in UAH - the interest rate on loans was 15% in May 2010¹ (was nearly 50% last year) or to obtain project financing in euros or dollars because of the depreciation of the UAH (5 to 8 UAH per \$ from 2006 to 2010). Despite such a constraint, the evaluation team did not pinpoint enough activities or strategies that would enable Phase 2 to put in place an action plan for the mobilization of financial resources with the aim of appropriately replicating the ESCO business model and EE projects in the post-implementation stage of Phase 2. At the time as the project design (project formulation stage in 2005). the replication approach has not focused enough on the set-up of a sustainable financial mechanism as a cornerstone for replicating a similar project or similar business model. For that reason, the replication approach as designed is rated MARGINALLY UNSATISFACTORY But ESCO-Rivne made some significant efforts towards replicating the ESCO scheme and developing some new activities in other cities and oblasts: ESCO-Rivne has already performed energy efficiency projects not only in Rivne and the region (oblast), but also in Mirgorod (Poltava oblast, East of Ukraine); Chernivtsi (south west of Ukraine close to Romanian border); projects have been identified for implementation in Dnepropetrovsk City (center of Ukraine); Donetsk City (East of Ukraine); Odessa City (south of Ukraine); Uzhgorod City (west of Ukraine); Zakarpat'e Oblast (west of Ukraine); Mikolaiv City (south of Ukraine). Currently those projects are at various stages depending mostly on financial resources.</i>
20. Management Arrangements	Unsatisfactory	<i>In regards to management arrangements, there was something wrong at the level of project formulation, Because the Project Manager also acted as Senior</i>

¹ National Bank of Ukraine : http://www.bank.gov.ua/eng/Publication/stat/data/6-stat-release_interest%20rates_e.pdf

		<i>Technical Advisor, the whole project did not benefit from the technical and financial advice from an international ESCO manager/specialist. Such a situation has probably had a negative impact on the development of the business model and resource mobilization. The evaluation team has rated the conceptual management arrangements as UNSATISFACTORY.</i>
Project Implementation: Marginally Unsatisfactory		
21. Implementation Approach	Marginally Unsatisfactory	<p><u>OUTCOME 1</u> To expand ESCO operations through implementation of Rivne City-wide/Oblast energy efficiency activities: MARGINALLY SATISFACTORY. (see Section 4.2.1.1)</p> <p><u>OUTCOME 2</u> To facilitate ESCO-Rivne operations through financing of activities having long payback periods: MARGINALLY SATISFACTORY. See Section 4.2.1.2</p> <p><u>OUTCOME 3</u> To reduce perceived investment risks in order to facilitate ESCO-Rivne's expansion of activities: UNSATISFACTORY. See Section 4.2.1.3</p> <p><u>OUTCOME 4</u> Replication of project experience/best practices and lessons learned throughout Ukraine and in other CIS countries": UNSATISFACTORY. See Section 4.2.1.4</p> <p><u>Monitoring and Evaluation</u>: SATISFACTORY</p> <p><u>Stakeholder participation</u>: SATISFACTORY</p>
22. Sustainability	Highly Unsatisfactory	The evaluator is currently concerned in this regards because the mobilization of financing is of the utmost importance to ensure the sustainability of ESCO-Rivne after the UNDP/GEF funding comes to an end. The sustainability of the ESCO business model relies on its capacity to mobilize financing for replicating EC projects. That issue was already raised in 2004 at the stage of FE Phase 1. On the other hand, the evaluator is not concerned about the sustainability of the outcomes related to energy savings and GHG emissions reduction resulting from the overall project.

1.3.4 Lessons Learned

The lessons learned from Project Phase 2 and improvement requirements for future similar EC projects scheme in the municipal sector:

- Financial Scheme: with the benefit of hindsight, in order to create a sustainable business model through an ESCO, it should be more useful and financially sustainable to put in place a revolving loan guarantee fund rather than a grant facility. A loan guarantee fund is more appropriate as a financial instrument to support ESCO development and its accountability in regards to financial issues and project profitability. In line with the whole project objective "Barrier removal..." UNDP/GEF provided equipment for free with the purpose of demonstrating the appropriateness of investing in EE projects in the municipal sector. In practice, such a "demonstration" was not required in Phase 2 and the project would have been supported by a sustainable financial instrument rather than by a direct investment (grant). A loan

guarantee fund would have been more appropriate. The financial support to direct investment from the UNDP has had a perverse impact on the tariff of energy supply, introduced an energy supply market distortion, and did not enable ESCO-Rivne neither to set up its own financial tools nor to establish its own financial network and partnership with financial institutions, national and international as well. On the contrary, a loan guarantee fund forces the beneficiaries to deal with investors and the financial sector to finance investment projects. Since a multiplier factor of 4 can be applied to a LGF, which means if 3 million USD have been invested in a LGF, it should have been possible to finance 12 million USD and avoid the constraints mentioned above in regards to the ODA regulation for setting the tariff and equipment depreciation rate for the purpose of replacement. In addition, the whole procurement procedure is different and simpler through a LGF rather than through direct investment.

- Resource Mobilization: To establish an ESCO business model, the managers should always address a dual set of priorities, and managers with the right skill sets need to be hired to deal with: (i) project financing, and (ii) quality control of technical services delivery, equipment selection and M&O activities. As a rule EE projects are technically quite simple and don't not require any cutting edge technologies, but resource mobilization (the fundamental of an ESCO) should be almost the highest priority. The focus must be put, at the earliest stage, on the issue of financial resource mobilization (partnership and third party financing, equipment leasing, equity and debt financing). By considering the Energy Performance Contract as a financial transaction rather than a technical project, the ESCO business model increases its chances to be sustainable and cost-effective once the GEF funding comes to an end. The major lesson learned from Phase 2 is that, although the project has been appropriately designed in terms of outputs and institutional arrangements, in continuation of Phase 1, most of the stakeholders in Rivne still consider an ESCO as a utility company. In addition, the implementation of the ESCO business model requires, from project managers and decision makers, a clear understanding and knowledge about financial analysis and project profitability as well as the capacity to deal with the financial sector. This lesson should be positively applied in all other similar projects, especially in CIS or former Soviet Union countries where a well established financial tradition and the capacity to deal with financial institutions are not yet extensively developed. In other projects funded by the GEF, the financial component related to equipment procurement should be smaller and technical assistance, especially for dealing with resource mobilization and market development, should be more significant.
- Competitiveness without market distortion: At the earliest stage of implementation of an energy supply ESCO project, the district heating tariff applied should be competitive and set at the same rate per thermal unit, rather than at the rate of other district heating suppliers in accordance with the actual investment and capital costs. Since one can suspect the ESCO business model is more efficient (staff and equipment) than municipally owned district heating companies, the benefit resulting from its performance should be used, to a certain extent, to finance new investment projects and ensure the financial sustainability of the company with appropriate capitalization. The direct investments scheme from the UNDP/GEF resulted in a perverse effect on the tariff paid to the ESCO for energy supply as well as a lack of effort in regards to proceeding with additional RM activities. Rather than transferring the benefit of the efficient equipment operation to the ESCO, the Municipality (major shareholder) withdrew its benefits directly through lower tariffs leaving almost nothing to the ESCO in terms of profit sharing benefits, equipment replacement and its own capitalization through investments in new projects.

1.3.5 Recommendations

Many of these recommendations should have been made years ago, but better late than never.

- Financial Resource Mobilization Options and Action Plan: The Project should support ESCO-Rivne in outlining a comprehensive "Resource Mobilization Business Plan"

(RMBP) in line with the current situation and needs. As has been mentioned in other project evaluations, a particular focus should be put on equipment suppliers or equipment leasing, debt and equity financing schemes, and project financing through commercial loans from financial institutions and development funds active in Ukraine. Among other things, the RMBP should provide a clear picture of the company in terms of: (i) the long term vision of ESCO-Rivne, the market and business opportunities in the oblasts and/or elsewhere; (ii) the likely investment plan for the upcoming 5 years and identification of business opportunities, information on immediate investment opportunities (project portfolio), and the reason why ESCO-Rivne requires financial partners; (iii) the actual value of the company and its assets, as well as its resources (human and equipment); (iv) and finally, the expected income stream from current and planned projects, the return on investment and the use and profit sharing breakdown structure.

- **Financial and Corporate Due Diligence:** Proceed ASAP to a corporate evaluation and rating of ESCO-Rivne with the purpose of providing to potential financing partners with the actual information regarding its assets, benefits and ratio in accordance with international accounting rules. All businesses involved in an acquisition or looking for a investment partnership need to ensure that the financial information is as accurate as possible, not only to prevent paying too much (or in a seller's case, receiving too little) but also to ensure that the good governance regulations and risk management objectives are met. ESCO-Rivne should ask for financial due diligence from an international accounting company.
- **Legal Advice:** Ask a reputable Legal Advisor Firm to provide guidance related to: (i) the best way to review and improve the shares breakdown structure before the transfer of assets from the UNDP/GEF to ESCO-Rivne: is it possible to pull out the private 10% shareholders of the company?; (ii) to recommend some improvements to the company's legal framework for securing new investors, in particular in regards to its minority shareholders (10%) and the best way to readjust the share breakdown before the assets transfer; (iii) to have a look at the municipal and/or national regulations in regards to equipment depreciation (fiscal depreciation and depreciation for equipment replacement as well) in a situation where the equipment has been granted through ODA. Is it so clear that the regulations do not allow including in the energy supply tariffs the depreciation for equipment replacement because the UNDP paid for it previously? One can understand that fiscal depreciation is not allowed when a company obtains the equipment for free, but the pattern should not be the same for setting the tariff since a provision for equipment replacement is always required regardless of the money paid for this equipment. Finally the Legal Advisor Firm should outline the legal components of the assets transfer protocol in line with the recommendation below.
- **Assets transfer:** In accordance with the agreement between GoU and UNDP, equipment and other tangible assets acquired through the GEF must be transferred at the end of the project timeframe. Among others, two options are possible: (i) assets transfer to the Municipality of Rivne which should decide on leasing for free (or not) this equipment to ESCO-Rivne over a certain period of time to be determined, the second option would be that the UNDP transfer the assets to ESCO-Rivne (a 90% municipally owned enterprise), which will include the related value in its accounting records. The final destination of assets must be ESCO-Rivne but, since the assets transfer will drastically increase the book value of ESCO-Rivne, the UNDP should first transfer all assets to the municipality. Secondly, the municipality must transfer these assets to the ESCO as equity for the company. The transfer protocol to be signed between Rivne Municipality and UNDP must mention these steps. By proceeding so, minority shareholders (10%) will be required to invest in the same ratio or to be diluted, or they can simply accept a proposal from ESCO for selling their shares. The evaluator recommends transferring the assets to ESCO-Rivne because it seems to be the best trade-off to support ESCO-Rivne's future development in terms of financing and to secure the best use of equipment towards the UNDP's project objectives. There are things to be commented on both sides (pros and cons) but the argument in favour of the ESCO should be appropriate on the condition ESCO-Rivne takes immediate action to secure its financial sustainability through a realistic and financeable scheme. In addition, the transfer protocol described above should be set

up by a Law Firm with the purpose of appropriately dealing with the issue of minority shareholders.

- Support to Project Duration Extension: ESCO-Rivne is the major output of this UNDP/GEF TA project. It's a matter of fact that the PMU and ESCO-Rivne as well did not successfully address the challenge of resource mobilization over the last 5 years and before during Phase 1. Before closing the project and transferring the assets, the UNDP/GEF should provide more time for ESCO-Rivne to restructure its capital and attract a project partner or an investor in a position to finance upcoming investment projects. The recommendation is to extend the project duration for 12 months on the condition the recommendations mentioned above and some others, be enforced and tightly managed by the PMU. At this crucial stage, ESCO-Rivne and the PMU need the involvement of an international Accounting Firm, a Legal Advisor, an international specialist to prepare the Resource Mobilization Business Plan, as well as a national business development officer. In addition, the international specialist involved in outlining the RMBP should be intensively active in the implementation of the RMBP and in training the business development manager. In the opinion of the evaluation team, the implementation of these recommendations is essential to give the chance to ESCO-Rivne to survive during the upcoming years. Because of the procurement and the time required for selecting the most capable persons, the project needs additional time. An extension of 10 or 12 months (depending on the remaining budget provision) should be sufficient to deal with the challenge of RM and, hopefully, achieving a positive conclusion of the project. At the same time, the project extension should provide the opportunity to hire a young team (*2 engineers with knowledge of English and understanding of business and energy*) that will be trained during the extension period (12 months). In addition, during the upcoming 10 or 12 months, the PMU should ensure the involvement of an international consultant to deal with activities related to resource mobilization and the financial scheme in line with the real ESCO business model. The UNDP/GEF invested almost 6 million USD from 2002 into this project and, since it is still possible to take appropriate actions to ensure the sustainability of ESCO-Rivne, the UNDP should not hesitate to support this recommendation.
- Allocate all remaining financial resources to support activities mainly related to Resource Mobilization: At the moment of the final evaluation mission (June 2010), the remaining uncommitted budget was more than 200,000 USD. In the opinion of the evaluation team, such a budget provision should be all invested to support the implementation of the Resource Mobilization Business Plan and getting advice from a Law Firm and Accounting Firm, additional promotional and information dissemination activities, e.g. workshops, mass media and publications. In accordance with the current budget planning, most of this budget should be used to implement additional EC projects, not to support soft TA activities. Because of the questionable performance in regards to Resource Mobilization(RM), the immediate need is much more related to the implementation of the RM plan, financial and shareholder arrangements and corporate appraisal (due diligence) towards investing in ESCO-Rivne's projects and to implementing the Business Plan as well as training a RM and business development officer. The other recommendations mentioned above (legal advices corporate audit and assets evaluation) will need additional resources to be appropriately carried out. Finally, the recommendation to extend the project duration for about 12 additional months will require a budget provision that should be provided by the investment budget provision. The project has already demonstrated ESCO-Rivne's capacity to successfully carry out EC projects in district heating. In the opinion of the evaluator, it should not be required to proceed in the same way with new direct investments and providing equipment for free. The current investment scheme (UNDP/GEF providing equipment for free) must stop immediately. Rather than investing more and more (up to the last drop...) in technology and equipment, it would be preferable for the PMU to use the remaining budget provision to demonstrate that the ESCO business model and ESCO projects can be replicated and sustainable though a financial scheme to be developed on the fast tract during the upcoming 12 months. From now up to the extended deadline (if approved), all resources and efforts should be dedicated to the issues of sustainability and replication the FE and the MTE highlighted many times before. The evaluator had a look at Atlas

(Commitment Control Budget Details) and, in accordance with updated data, if the tenders (2 ongoing tenders) proceed, the remaining budget will be about US\$200,000 (plus some VAT reimbursements). The PMU should already outline the budget related to the project extension and make the decision to cancel (all or a part of) the current tender process if activities to be implemented during the project extension require more than the estimated (Atlas) remaining budget of US\$200,000.

2. Introduction

2.1 Purpose of the Evaluation

The overall purpose of the evaluation is to measure the effectiveness and efficiency of project activities in relation to the stated objectives endorsed by the GEF, including any agreed upon changes in the objectives during project implementation and any other results.

The terminal evaluation has the following complementary purposes:

- a) To promote accountability and transparency, and to assess and disclose levels of project accomplishment;
- b) To synthesize lessons learned that may help improve the selection, design and implementation of future GEF activities.
- c) To provide feedback on issues that are recurrent across the portfolio and need attention, and on improvements regarding previously identified issues.

2.2 Key Issues Addressed

The GEF Monitoring and Evaluation Policy specifies that the Terminal Evaluation shall assess, at a minimum:

- The achievement of outputs and outcomes and provide ratings for the targeted objectives and outcomes;
- The likelihood of sustainability of the outcomes at project termination, and provide ratings for this.

Evaluations in the GEF explore five major criteria:

- (i) Relevance: the extent to which the activity is suited to local and national development priorities and organizational policies, including changes over time.
- (ii) Effectiveness: the extent to which an objective has been achieved or how likely it is to be achieved.
- (iii) Efficiency: the extent to which results have been delivered with the least costly resources possible.
- (iv) Results: the positive and negative, and foreseen and unforeseen, changes to and effects produced by a development intervention. In GEF terms, results include direct project outputs, short- to medium-term outcomes, and longer-term impacts including global environmental benefits, replication effects and other local effects.
- (v) Sustainability: the likely ability of an intervention to continue to deliver benefits for an extended period of time after completion. Projects need to be environmentally as well as financially and socially sustainable.

The Terminal Evaluation serves as an agent of change and plays a critical role in supporting accountability. The emphasis of the evaluation mainly focused on major issues and challenges the project had to deal with over the last years:

Project indicators The evaluation assessed the achievement toward indicators related to expected outcomes, planned duration and budget and co-financing of the project.

Implementation The evaluation assessed the implementation of the project in terms of quality and timeliness of inputs and efficiency, the effectiveness of activities carried out and the responses to evaluation recommendations made during the mid-term evaluation in September 2009.

Project outputs, outcomes and impact The evaluation assessed the outputs, outcomes and impacts achieved by the project as well as the likely sustainability of project results.

At the stage of the FE, the evaluation team mainly dealt with issues related to the sustainability of the major outcomes, the likely replication of similar business models, the project implementation scheme and the lessons learnt.

2.3 Methodology of the Evaluation

In preparing the evaluation, the evaluation team focused its efforts on reading the most important documents: the Project Document and Annual Project Progress Report, PIR, Investment Project Documents, and documents related to ESCO twinning arrangements. The team also met with ESCO management and staff members, attended the Steering Committee meetings and held meetings with major shareholders and decision makers, including the Rivne mayor and the National Project Director.

As required in all evaluations, the team used the Information Triangulation Methodology to perform the evaluation. Inasmuch as possible, all data and information gathered were validated through three different sources.

The effort required to carry out the evaluation (25 w-d) was appropriately estimated. Half of the time was spent in Ukraine (12 w-d) from June 13 to June 27.

Finally the evaluation team would like to mention the transparency of the whole evaluation process. The documents or dates required by the evaluation team were made available on the spot.

The FE team presented its main findings, ratings and recommendations to the UNDP during the final debriefing meeting held in Kiev on June 25. The Country Director, Program Officer and Project Manager took part in this final debriefing meeting. Some of their comments have been taken into consideration in preparing the FE Draft Reports.

The list of documents reviewed for the purpose of this evaluation is included in Appendix 5.

The list of persons/organizations met is presented in Appendix 2.

2.4 Structure of the Evaluation

In accordance with the GEF MTE methodology and the TORs, the evaluation process was structured to focus on the implementation of activities described in the Project Document and the logical framework. The Evaluation Report is structured in accordance with the GEF's requirements as mentioned in the TORs.

For those who would like to have a quick view, the Executive Summary has been drawn up comprehensively enough to provide the most important findings, ratings and rationales, conclusions and recommendations, as well as lessons learned.

Although the evaluation team could not avoid taking a look at the operations of ESCO-Rivne, the purpose of the evaluation was not to evaluate this ESCO. As a major beneficiary of the UNDP-GEF project and since ESCO-Rivne is accountable for moving on with the implementation of the business model and securing EE investments in the municipal sector, some of the major recommendations in this FE Report are obviously addressed to the challenge ESCO-Rivne is facing to be cost-effective and sustainable as a business model in the municipal sector in Rivne and other major cities in Ukraine.

3. The Project and its Development Context

3.1 Project Start and Duration

Phase 2 is a continuation of Phase 1 (2002-2005). Phase 2 began in June 2006 and is expected to be completed in June 2010. PMU was granted an extension up to the end of September 2010.

3.2 Problems that the Project Seeks to Address

In line with the Government's priorities, this project addresses a key issue in the reduction of greenhouse gas emissions through large-scale improvements in energy efficiency in Ukraine's communal heat supply sector. Phase 2 addresses this EE improvement in the municipal district heating sector by implementing a new business model that has already proven its relevance in many other countries over the last 20 years. The major challenge is to implement the new business model in municipalities where the regulations and habits are not focused on the profitability of investments in infrastructures. In other words, the project intends to remove the institutional and financial barriers and create the most favorable environment for capital-intensive investments, in accordance with the required cost-effectiveness and sustainability of the business model.

3.3 Immediate and Development Objectives of the Project

As far as the country as a whole is concerned, the project helped to reduce the level of dependence on external gas supplies and decreased the overall consumption of fossil fuel and associated GHG emissions by removing the barriers to supply side energy efficiency improvements in district heating systems in the main cities of Ukraine, first in Rivne and after in other oblasts. The GEF participation is outlined with a development objective of reducing major existing barriers to replication of the new business model and the appropriate financial mechanism. The successful operation of ESCO-Rivne should have the immediate objective of setting up similar ESCOs in other cities and attracting foreign private capital and experience to Ukraine. The FE pointed out some issues and barriers the project has not been able to successfully deal with, especially in regards to setting up the financial mechanism or the needed financial instrument for replicating that business model in other oblasts in Ukraine.

The implementation of the project is providing several domestic benefits towards the national development objectives, including social and economic benefits as well. The most essential benefits include: positive economic and financial returns from equipment operation, a higher level of heat supply services and the reliability of the district heating systems operations, lower air pollution, the creation of incentives for energy savings in the public and residential sectors, a reduction of budgetary expenditures on residential subsidies and institutional building heating bills, an improvement of the qualifications of district heating company personnel and their management capacity. A successfully operating ESCO-Rivne should result in a further expansion in other major cities and oblasts. In addition, the expansion of ESCO-Rivne's activities will contribute to the development of the local energy services market, that is to say, should result in a significant EE market transformation.

Finally, the national and global benefits expected are consistent with Ukraine's national development priorities in terms of GHG reductions and the reduction of the country's dependency of gas imports.

3.4 Main Stakeholders

To implement Phase 2, the project's organizational chart included a very limited scope of stakeholders with the purpose of proceeding with project implementation in the most efficient way.

In accordance with the results of Phase 1, the UNDP agreed to continue and support the establishment of a municipal ESCO in Rivne. The Rivne Municipality owns about 90% of ESCO-Rivne's shares; the remaining shares are held by a private corporation (6%) and some other private shareholders (4%).

To summarize, the major stakeholders are also the ESCO's major shareholders:

- KommunEnergiia (the Oblast's DH Enterprise):	45%
- MiskSvitlo (the Municipality's lighting company):	45%
- Other private entities:	10%.

Other stakeholders include project partners and beneficiaries, but they do not take part in the decision-making process.

3.5 Results Expected

Beyond its basic objectives of the reduction in GHG emissions and the removal of barriers (institutional, regulatory and financial) to EE in the field of district heating, the project expected to implement a new and modern business modality that is financially and technically efficient and cost-effective throughout its investments and its energy supply activities. That main result expected should be used as a model for replicating the ESCO scheme in other oblasts or to extend ESCO-Rivne's activities to other oblasts in Ukraine.

4. Findings and Conclusions

4.1 Project Formulation

4.1.1 Conceptualization/Design Relevance and Implementation Approach

Rated **Moderately SATISFACTORY**

The need to improve district heating systems in Ukraine and in particular in the Municipality of Rivne is still very significant, nearly endless. Phase 2 is not only related to fulfilling the current needs but, also and above all, to overcoming the major barriers to investments in the municipal sector. The ESCO business model has been adopted by the City of Rivne and, although such an innovative business model has not been actually implemented in accordance with the "usual" Energy Performance Contract model, the project moved in the right direction by dealing with current regulations and constraints in the municipal sector. The business model implemented in Rivne is a successful PPP in line with the GEF objectives and project design. Because of the nature of ESCO-Rivne as a PPP, the regulations framework and implementation procedures are now easier than before. If some barriers (regulations and procedures) have been removed in Rivne, the situation is not so easy when ESCO-Rivne intends to implement some similar energy conservation projects in other cities, even in the same oblast. The example of the Ostrog City project clearly shows that the identified barriers (financing and regulations) still remain in other cities.

The UNDP-GEF made the right decision when Phase 2 was approved because the implementation of a new business model is very effort-intensive and requires a certain timeframe to proceed with the needed capacity building of ESCO staff members and energy end-users. Although it takes time to develop and implement a new business model, it is

perhaps longer and difficult to establish an efficient and sustainable business relationship with financial institutions.

Over the last 20 years, the investments in the district heating sector have been drastically underestimated, not to say clearly neglected by municipal decision makers and, as a result, heating supply and distribution systems have shown rather pitiful results in terms of energy performance and profitability as well. Phase 2 cannot perform miracles in such a difficult situation, but by addressing the relevant issues and promoting a new business model, the project is heading in the right direction.

Phase 2 is in line with the national GHG emissions reduction objectives and energy savings target. As a signatory of Annex B of the Kyoto Protocol, Ukraine agreed to formulate a post-2012 emissions reduction programme by 2009, which intends to freeze emissions at the 1990 level. In addition, because the cost of gas has drastically increased over the last 2 years and because of recent difficulties in securing the gas supply from Russia, Ukraine is currently revising its targets related to energy savings, including the energy consumption of district heating systems. The current national energy savings target set at 4 to 6% should be updated through a new decree in line with the national energy policy.

In essence, Phase 2 addresses the issue of EE improvements on the energy supply side. As a rule, EPC is appropriate for demand side EE projects, because the energy and money savings can be readily calculated and also because the investment costs are lower and the payback period shorter. In accordance with the Project Design Document, by specifically dealing with supply side EE projects, Phase 2 was not in a position to deal with the EPC mechanism.

Identified in the earliest stages (project design and inception) as an institutional barrier, the lack in terms of the "*Ability of municipalities to enter into EPC agreements*" is still current. The Phase 2 strategy of addressing outstanding barrier issues by the "*bundling of several EPC contracts into one, for example, for city-wide activities*" has not worked up to now. Taking the institutional, sectoral and policy contexts into consideration, Phase 2 has not yet tackled a large number of similar and relatively small-scale projects that could not be financed separately using traditional approaches. Four EE projects implemented up to now during Phase 2 were based on a contractual mechanism more similar to a standard energy supply contract rather than an EPC.

There is no doubt about the usefulness and relevance of Phase 2. But the project concept related to direct equipment procurement financing is quite questionable. The budget provision for direct investments has been overestimated while the provision for technical assistance, on the national level and international level as well, has been underestimated.

4.1.2 Country-Ownership/Drivenness.

Rated **Highly SATISFACTORY**.

Because the current project is a continuation of the previous project launched about 8 years ago, Phase 2 appropriately involves the same stakeholders. The municipal authority has strengthened its ownership of ESCO-Rivne up to 90% of the company's shares. ESCO-Rivne's equity remains very low (about \$50,000). The municipal sector and some budgeted institutions (schools and hospitals) have invested in EE project implementation (project equity) but have not invested in ESCO-Rivne's capital. Up to now (information updated in June 2010), the project's equity reached about USD212,000 as opposed to a target of USD250,000 as stated in the Project Document. The municipal sector was not committed to investing in ESCO-Rivne's equity in accordance with the Project Document because, in accordance with the initial project design, the equity should be generated by the transfer of assets (installed equipment ownership) from UNDP to ESCO-Rivne by the end of 2010. As a result, ESCO-Rivne's actual equity in equipment will be about 3 million dollars.

Because of its current undercapitalization, ESCO-Rivne is not in a position to borrow money from any financial institution. The project should have addressed the issue of financing earlier, as mentioned in the previous evaluation (MTE). Although debt financing or equity financing

were not easy to use in Ukraine over the last years because of the very “grey” economic context, some other timely options were available but not addressed, as an instance, Asset Financing². The most common kind of asset financing is to extend loans against accounts receivable but, because of the very high interest rate (more than 50%) required by commercial financial institutions, this type of financing scheme was not appropriate.

On the one hand, because of its significant partnership in ESCO-Rivne (90%) as major shareholder, the municipal authority sends a clear message in regards to its willingness and driveness to implement the new ESCO business model. On the other hand, in the absence of a set of clear investment criteria, this type of ownership can cause some “political” conflicts of interest in regards to investment decisions. These considerations were not in the air at the moment of the project design of Phase 1 or Phase 2, but before facing an issue, ESCO-Rivne must keep a certain distance and establish some clear criteria in regards to the cost-effectiveness of its investments and to its selection of quality clients or EE project beneficiaries.

Taking into consideration the municipal authority's sound involvement in terms of the company's ownership and its role as investment decision facilitator (especially for budgeted municipal institutions) and considering the total investment in the project's equity (\$212,000 as opposed to the overall project target of \$250k), the municipal sector's ownership and driveness have been rated **Highly SATISFACTORY**.

4.1.3 Stakeholders Participation

Rated **Highly SATISFACTORY**

The participation of stakeholders is not an issue in the Rivne municipal sector. The NPD has a very appropriate professional track record and he is still involved at a very high level as deputy mayor in the municipal sector. In addition, the new Head of ESCO-Rivne is also a very capable municipal sector manager. In practice, Phase 2 is not required to deal with a large number of stakeholders in Rivne. The former mayor officially supported and promoted ESCO-Rivne and the new mayor supports and promotes it as well, perhaps even more so.

The project conducted a number of activities towards increasing the awareness and participation of the municipal sector and oblast decision-makers in regards to the ESCO business model and its expansion outside the Rivne area. At the moment, most of the stakeholders involved come from the Rivne municipal sector but a number of EE projects implemented in other towns in the Rivne Oblast required the involvement of local stakeholders: Nlyniv, Oleksandriya, Ostroh, Dyadkovychi and Verby Village. In addition, ESCO-Rivne is currently dealing with the following cities in the implementation of EE projects: Nykolayiv, (Nykolayiv Oblast), Uzhgorod (Zakarpattia Oblast), Nonetsk (Donetsk Oblast) and Odessa (Odessa Oblast). Such a list of municipal stakeholders points to the efforts ESCO-Rivne has made over the last years to extend its network and to secure the participation of additional stakeholders and municipal institutions.

Phase 2 successfully secured the tangible participation of a number of international stakeholders to fund additional activities: the Japan Partnership Fund (0,315 M US\$), a USAID Grant under the GDA Programme (0,130 M US\$) and a twinning agreement with Econoler International (from the private sector). Finally, since the Project conducted a study tour in Canada in May 2010 to discuss and review the ESCO business model with some of the most important ESCOs in Canada, decision makers are more and more aware about the upcoming challenges in the development of the ESCO business model in the oblast. The upcoming closing Seminar schedule in October should finally enable the project to share the lessons learned with the central government authority, the financial sector and project promoters, some international donors and financing experts.

² Asset **Financing** for which assets are converted into working **cash in exchange** for a **security interest** in those assets.

However, the evaluation team noticed a certain lack of participation on the part of the Ukrainian central government in regards to municipal regulations. The municipal sector represents a huge potential in regards to EE investments, especially towards improving district heating systems. For a financing scheme to be operational, Energy Performance Contracting and/or an ESCO financial scheme, as implementation and financial tools, will require improvements and adjustments to the municipal sector's regulatory framework, especially in terms of financial mid- or long-term commitments the EPC scheme requires. In fact, the use of EPC requires a mid-term (sometimes long-term) financial commitment on the part of municipal institutions and utilities. Up to now, Phase 2 (as well as Phase 1) did not appropriately succeed in raising the attention or interest of central government legislators in this regard. Current municipal regulations as they stand are not able to guarantee long-term financial commitments, which are essential to secure investments over the full payback period (3 to 8 years).

Mainly because of the sound involvement of the municipal authority at all levels in the Rivne area and other oblasts, and the willingness, not to say eagerness, of other budgeted municipal institutions to embark on the ESCO scheme promoted by Phase 2, the stakeholders' participation has been rated **Highly SATISFACTORY**.

4.1.4 Replication Approach

Rated **Marginally UNSATISFACTORY**.

Taking into consideration the fact that the needs in regards to EE improvements in municipal infrastructures are almost endless, it is easy to conclude that the replication potential is huge. The point is to know if Phase 2 has adopted the most appropriate strategy and approach to fulfill the needs and replicate EE projects on a large scale in Rivne and elsewhere in other oblasts and other CIS countries despite the actual needs for improving the district heating facilities.

The replication component has been pointed out as a major Project Outcome (Outcome 4) but also as an objective of Outcome 2: Phase 2 is intended *"to set up an innovative financial mechanism (the ESCO approach) in a pilot city (Rivne) for implementing energy efficiency activities on a sustainable basis with the capability for self-replication in other Ukrainian cities"*. In addition *"Successful operation of the Rivne ESCO should facilitate setting up similar ESCOs in other cities and attracting foreign private capital and experience to Ukraine"*. Up to now, Phase 2 has not succeeded in implementing *"innovative financing schemes for replication of and credit lines for the operation of the ESCO modality in municipal district heating throughout Ukraine"*, not even in Rivne City.

In essence, the development of the ESCO business model is based on an appropriate financial scheme, the involvement of financial institutions, and on the ESCO's financial capacity to mobilize commercial credits and investments capital with the purpose of co-financing long payback EE projects. As long as these basic financial tools are not in place and operational, the capacity to extend and replicate the ESCO business model and implement EE projects accordingly is very low, even worse. The project concept did not sufficiently foresee the time and resources required to deal with the resource mobilization requirements.

The current economic situation in Ukraine, e.g. an interest rate of 50%, does have an impact and disables the normal operations of the financial market; in other words, the financial market does not work. In addition, the UAH (Grivnas) has significantly depreciated over the last 5 years, from 5 to 8 UAH per dollar. The financial context is unfavorable for borrowing on the domestic market in UAH or to secure project financing in euros or dollars. The question is to know who was interested in investing in Ukraine over the last recent years? Despite such constraints, the evaluation team did not pinpoint enough activities or strategies that would enable Phase 2 to put in place an action plan for the mobilization of financial resources with the aim of appropriately replicating the ESCO business model and EE projects in the post-implementation stage of Phase 2. At the time of the project design (project formulation stage in 2005), the replication approach was not focused enough on the set-up of a sustainable financial mechanism as a cornerstone for replicating a similar project or similar business

model, for that reason the replication approach as designed is rated **Marginally UNSATISFACTORY**.

4.1.5 Other aspects: Management Arrangements

Rated UNSATISFACTORY

Based on the successful implementation of Phase 1, Phase 2 improved the way to effectively manage the project and to connect the Project Management Unit with the project beneficiary, that is to say, in practice, ESCO-Rivne.

Phase 2 is being managed by only a few capable professionals. The management structure is very light even though there are two project offices. The monthly rent of the two offices is paid by the project beneficiary as an in-kind contribution and the Kiev office is appropriately located very close to UNDP House, which allows easier and more efficient communications with the Programme Officer and efficient procurement management.

Finally, because the Project Manager is also ESCO-Rivne's Senior Technical Advisor, the management bridging between the Phase 2 structure and ESCO-Rivne has been secured and this management arrangement should have enabled the PM to deal with the priority issues the project beneficiary faces in real time and backstopping deviations. But the confusing role between Senior Advisor and Project Manager has had a bad impact on activities related to business development and resource mobilization. The whole project suffered from the lack of capacity in the field of ESCO development and the implementation of a new business model. The intensive involvement of an international ESCO specialist would have been valuable in supporting ESCO-Rivne in its development. As a rule, the Project Manager must focus on his management tasks, leaving other and capable specialists to deal with other critical issues. In addition, ESCO-Rivne would have benefited more effectively from the day-to-day work carried out by the Monitoring and Reporting Specialist by involving her more intensively in the field of financial investment analysis. The Monitoring and Reporting Specialist (a PMU full-time project staff member) is based in Rivne and should also closely deal with issues regarding the monitoring and evaluation of the impacts of the EE projects implemented. Because of the questionable performance in regards to Resource Mobilization which resulted to a significant bad impact on the whole project sustainability and replication, the rating related to Management is not very high.

The evaluation team has rated the *conceptual management arrangements* as **UNSATISFACTORY**.

4.2. Project Implementation

4.2.1 Implementation Approach.

Rated Marginally Unsatisfactory

4.2.1.1 OUTCOME 1 Implementation Approach

To expand ESCO operations through the implementation of Rivne City-wide/Oblast energy efficiency activities): **Marginally Satisfactory**

In regards to the technical perspective and institutional arrangements related to **Output 1.1 (Signed EPC contracts for Rivne City-wide energy efficiency activities)**, the implementation approach has been relevant although the total investment is under target, nearly 3 million USD rather than 5 million USD as expected. However the capacity of the technical team members (EC project design and M&O) was appropriate to carry out much more EC projects in district heating. The total investment of about 3 million USD is the result of the lack of investment capital rather than the technical capacity of ESCO-Rivne.

During the project timeframe, ESCO-Rivne has expanded its operations at the city-wide and oblast levels:

- 1) A total of 18 projects implemented in the City of Rivne:
 - 6 projects with UNDP TA (USD 2,498,182.26 of UNDP-GEF)
 - 4 projects with UNDP-Japan Trust Fund (USD 77,649.09)
 - 8 municipal and ESCO-Rivne financed projects, without UNDP TA (USD 546,747.80)
 - non UNDP parallel financing: state budget, local budget and private companies (USD 7,372,222.24)
- 2) During Project implementation, 7 projects were implemented in the Rivne Oblast :
 - 1 project with UNDP TA (USD 9,615.52)
 - 1 project with UNDP-Japan Trust Fund (USD 14,509.63)
 - 5 projects without UNDP TA (USD 106,184.60)

The rating is **SATISFACTORY** even though there is no EPC; however, the Chauffage Contract type implemented by ESCO-Rivne is also a typical contract model for ESCOs.

The implementation approach related to **Output 1.2** (*Opportunities for implementing energy efficiency in Rivne/other oblast regions identified*) has been evaluated as Marginally **SATISFACTORY** because the implementation approach for expanding similar projects in other oblasts or in other cities of the Rivne Oblast has not been so successful. At the moment of the final evaluation mission (June 2010), 6 projects were already implemented and 3 others were underway at different stages of implementation in Rivne. The implementation approach would have had been more “aggressive” with the aim of implementing more than 6 projects, but to a certain extent, 6 or 9 EC projects are quite sufficient to remove barriers and demonstrate the relevance of the ESCO business model (see Appendix 1). Later in the project cycle (mid 2010), some additional small and low capital-intensive EC projects were identified but the evaluator does not recommend any project duration extension for that purpose (the evaluator recommended to use the remaining budget to support activities related to RMBP and other TA and advised to address the issues of sustainability and replication of the ESCO business model).

In terms of business development outside the Rivne area (Output 1.2), the implementation approach has been too slight for the replication of EC projects in the same field. The target of implementing “EPCs for at least 15 million USD by the end of project timeframe” is much more linked to a very optimistic view in the absence of a financial mechanism for the implementation of these projects. Nevertheless, the potential partners among the municipalities in Ukraine has been researched. Following preliminary discussions with more than 10 Ukrainian municipalities and oblast administrations, some of them expressed interest in cooperation. Thus ESCO-Rivne has prepared letters with the request for potential projects and sent those letters to some local governments:

1. Chernovtsy City (Municipality),
2. Dnepropetrovsk (state oblast administration),
3. Donetsk City (state oblast administration),
4. Odessa City (Municipality),
5. Uzhgorod City (Municipality),
6. Zakarpat'e (state oblast administration),
7. Mykolaiv City

All these cities expressed their interest in cooperating. In addition, ESCO-Rivne has already carried out energy efficiency projects not only in Rivne and the region (oblast), but also in Mirgorod (Poltava Oblast, East of Ukraine); Chernivtsi (south west of Ukraine close to the Romanian border); projects have also been identified for implementation in Dnepropetrovsk City (center of Ukraine); Donetsk City (East of Ukraine); Odessa City (south of Ukraine); Uzhgorod City (west of Ukraine); Zakarpat'e Oblast (west of Ukraine); Mikolaiv City (south of Ukraine). Currently those projects are at various stages depending mostly on the financial resources.

Implementation approach related to Output 1.2 is rated **SATISFACTORY**.

From a technical perspective, the implementation approach related to **Output 1.3** (*All works pertaining to city-wide/oblast projects completed*) is **SATISFACTORY** because all approved EC projects have been completed.

4.2.1.2 OUTCOME 2 Implementation Approach

To facilitate ESCO-Rivne operations through financing of activities having long payback periods: **Marginally SATISFACTORY**

The outputs related to Outcome 2 have been rated **Marginally SATISFACTORY**. The PMU and ESCO demonstrated that they were able to successfully implement EC projects on time and within budget. The procurement process has been carried out in accordance with UNDP regulations and the installed equipment is quality equipment with a relatively long life cycle, at least of 20 years. The ESCO proceeded with the M&O of its new facilities in accordance with best practices in that field. The investment budget provision from GEF has been used to fund long payback period projects. Any other project was implemented through another funding source. What is sure is that the project facilitated ESCO-Rivne's operations through the financing of projects with long payback periods, but did not move on through other financing schemes. USAID, JICA and Finland supported some project initiatives, but under the same pattern as the GEF funding. In other words, the project did not use any financial scheme other than direct grant investment.

4.2.1.3 OUTCOME 3 Implementation Approach

To reduce perceived investment risks in order to facilitate ESCO-Rivne's expansion of activities: **UNSATISFACTORY**

Mainly because the project did not successfully come into an agreement with the financial sector (namely: Banks/insurance companies or others), the evaluator rates this implementation approach of Outcome 3 as **UNSATISFACTORY**. Expansion outside the Rivne area is not related to investment risks because these projects are low risk projects, both technically and financially. Because ESCO-Rivne has not been in a position to mobilize financial resources, it has been very difficult, even impossible, to invest in other projects. In addition, one can suspect that the major shareholder (Rivne Municipality) was not so willing to invest the "grant" for funding investment in other municipalities.

However, ESCO-Rivne has secured agreements for credit lines of USD 556,000 from local banks (Avalbank, Privatbank and Ukgazbank), which is a positive indicator in regards to risk perception from the financial sector.

4.2.1.4 OUTCOME 4 Implementation Approach

Replication of project experience/best practices and lessons learned throughout Ukraine and in other CIS countries: **UNSATISFACTORY**

The Project provided training and shared the project experience/best practice with other municipalities in Ukraine, especially within the Rivne Oblast.

The documents developed with UNDP-GEF project assistance have been shared with interested municipalities all over Ukraine. Those documents are related to municipal ESCO business:

- ESCO Founding Agreement;
- Model Energy Performance Contracts (EPC) including: budgetary institutions, district heating company, commercial building owners, housing cooperatives and condominiums, municipality);
- Model contracts (templates) with customers including: Credit Sale Agreement, Energy Services Agreement, Pledge Agreement;
- Recommendations regarding contractual schemes and options to attract investments ;
- Risk mitigation plan; model contracts with suppliers including: General Conditions of Contract, Special Conditions of Contract;
- Working operation manuals and typical model (template) documents for ESCO including: Project Manual; Administration Manual; Financial Analysis of Customers; Procurement Manual; Engineering Manual; Quality Assurance Programme;
- ESCO staffing requirements;
- List of training programs for ESCO staff;
- Requirements/specifications for ESCO equipment (i.e. energy audit equipment and others);
- Training materials for training sessions for all staff involved.

In addition, the project experience was shared with UNDP colleagues in Belarus and Kazakhstan in September, 2007. In April 2008 "ESCO-Rivne" management presented the company's experience in practical implementation of financial mechanisms in the ESCO business within the framework of the international round table "Models of institutional financial mechanisms for energy efficient heat supply services".

Finally, the staff of 5 oblasts/municipalities - members of the regional association of energy saving (Rivne, Volyn', Khmelnytskyi, Lviv, Zhytomyr) participated in the full-day interregional practical conference "Models of financial mechanism for implementation of energy saving/efficiency measures in the public sector and at communal facilities. Experience, Problems and Prospects" organized in Rivne upon the initiative of the UNDP-GEF Project and Energy Saving Department of Rivne oblast state administration in November 2008. UNDP Ukraine experts imparted practical knowledge and lessons learned during the establishment of the ESCO company (CJSC "ESCO-Rivne") as a sustainable mechanism to fund municipal energy efficiency projects; it also explained opportunities of using "flexible mechanisms" defined under the Kyoto Protocol and intended to lower the overall costs of achieving its emissions targets.

The problem with this Outcome is the result of the fact that the project has not any successful experience other than its technical achievements in Rivne. The project implementation approach for sharing the technical experience and the institutional arrangement (Municipal ESCO) has been completed and some information dissemination activities have been carried out within Phase 2. The most important replication experience to share with other municipalities should have been related to an innovative financial mechanism and EPC, which has not been set up until now, although ESCO-Rivne mentioned that *"ESCO-Rivne" management presented company's experience in the practical implementation of financial mechanisms in ESCO business*". The project should have had more experiences to share, especially in regards to financial schemes and mechanisms to put in place for the implementation of EC projects in district heating and energy demand side. Outcome 4 is rated **UNSATISFACTORY**.

4.2.1.5. Monitoring and Evaluation: **SATISFACTORY**

The mid-term evaluation pointed out a lack in regard to the monitoring reports (QPR and the PIR) because they did not provide enough information. In the opinion of the evaluation team, the Phase 2 M&E reports were not precise enough to enable the UNDP Country and Regional Offices to get a clear picture of the actual project implementation status. However the APR 2009 was comprehensive enough and included details and information useful to external stakeholders for learning about the actual project progress, outcomes and impacts.

In addition, the M&E of priority impacts, that is to say GHG emissions reduction, has been improved and a reliable methodology for determining the GHG emissions reduction/avoided based on thermal unit delivered has been developed and implemented. This methodology is

based on the difference between the average energy consumption (M³ gas) to produce 1 Gcal from KommunEnergi (146 M³ gas) and the ESCO (136 M³ gas).

The PMU dedicated one person responsible for all M&E activities and she was in a position to provide the evaluation team with reports, tables and updated data to proceed with the final evaluation.

Because of the improvements to M&E in 2009/2010, the M&E process has been rated **SATISFACTORY**.

4.1.2.6 Stakeholder participation: **SATISFACTORY**

Because of the sound involvement of the municipal authority at all levels in the Rivne Municipality and the Oblast as well, and the willingness of budgeted municipal institutions to embark on the ESCO adapted scheme promoted by Phase 2, the stakeholders' participation has been rated Highly **SATISFACTORY**. The mayor, as well as the deputy mayor and other decision makers supported the PMU and ESCO in regards to administrative issues, contracting procedures and authorizations. At the same time, the contrary would have been disappointing since ESCO-Rivne was required to grant a significant tariff discount (40%) to energy end-users. Even in some other municipalities, as an instance Ostrog near Rivne, are trying to do business with ESCO-Rivne mainly because they face some urgent needs for improving their local district heating systems and they would like to take advantage of getting the equipment for free!

The PMU secured the involvement of IBSER, an NGO dealing with Budgetary and Socio-Economic Research (IBSER). The Institute has asked to deal with legal and regulation barriers (issues) to implement energy efficiency projects in central budgeted cities, approval procedures (Ministry of Finance and others), and to propose a scenario for the implementation of an EE project in Ostrog municipality as a client under third party financing. The IBSER should provide guidance in regards to the extend to which the Ostrog Municipality is in a position to deal with ESCO-Rivne for the installation of new boilers in kindergartens. At the same time, the IBSER and the PMU were discussing with NEFCO regarding setting up the first third party investment scheme through ESCO-Rivne.

4.1.2.7 Financial Management and Co-Financing: **Marginally UNSATISFACTORY**

The budget disbursement pace is not in accordance with the planned calendar. In June 2010, the total budget disbursement from the GEF grant was close to \$2.85 million dollars, which is 82% of the total grant. At this point in time, the remaining budget provision is about 350,000 USD.

The evaluator is concerned about the final budget disbursements before the end of the project timeframe. The evaluation team recommended extending the project timeframe for an additional 12 months, rather than closing the project in June 2010. Such a 12-month extension will be useful to successfully conclude with the whole project work plan especially the outputs related to Outcomes 3 and 4, which have been rated **UNSATISFACTORY**. In the opinion of the evaluator, all remaining budget provisions should be used for TA related to (i) resource mobilization business plan development and implementation; (ii) making the adjustments to the current shareholder structure and setting up a new financial partnership with an investor or a project partner and (iii) proceeding with a broad information dissemination programme on the ESCO business model and its innovative financial scheme (to be determined...).

The PMU and ESCO identified a list of small-scale projects to be implemented with the remaining budget provision, but these projects cannot be implemented within the current project timeframe. In the evaluator's view, it would be preferable that the PMU use that budget provision to improve the outputs especially under Outcomes 3 and 4 rather than replicating a financial scheme (direct investment from ODA/grant), which has no future.

Because of the remaining budget provision, financial management is rated **Marginally SATISFACTORY**. By transferring this budget provision from the investment budget provision

to other TA components, the project will have an outstanding chance to improve Outcomes 3 and 4, as well than.

In regard to Co-Financing, there is still a lack of funding from the Government (-1,000,000 USD) and others (-1,700,000 USD).

Co-financing

Co financing Type/Source	IA own Financing		Government		Other Sources		Total Financing		Total Disbursement	
	Mill US\$		Mill US\$		Mill US\$		Mill US\$		Mill US\$	
	Proposed	Actual	Proposed	Actual	Proposed	Actual	Proposed	Actual	Proposed	Actual
Grant	\$3 494 000	\$3 494 000				\$434 000	\$3 494 000	\$3 928 000	\$3 494 000	\$3 284 000
Credits										
Loans										
Equity			\$250 000	\$212 000		\$137 000	\$250 000	\$349 000	\$250 000	\$349 000
In-kind			\$1 000 000	\$496 000		\$50 000	\$1 000 000	\$546 000	\$1 000 000	\$546 000
Non-grant Instruments										
Other Types					\$2 306 000				\$2 306 000	
Total	\$3 494 000	\$3 494 000	\$1 250 000	\$708 000	\$2 306 000	\$621 000	\$4 744 000	\$4 823 000	\$7 050 000	\$4 179 000

(*)Others refers to contributions mobilized for the project from other multilateral agencies, bilateral development cooperation agencies, NGOs, the private sector and beneficiaries. It includes a grant contribution from UNDP-Japan Partnership Fund (0,315 mill US\$), USAID grant under GDA Programme (0,119 mill US\$) and Econoler Int. ESCO-Rivne twinning partner in-kind contribution (0,05 mill US\$), ESCO-Rivne's own capital (0,128 mill US\$)

Project 00048250 Financial data form Atlas executive snapshot (2010-06-30)

GEF Funds

	Overall Award Totals:	Budget	Encumbrances	Expenditures	Balance
2006				104,222	
2007				594,647	
2008				171,640	
2009				1,552,194	
2010		780,000	204,161	427,141	352,859

4.2.2 Sustainability: **UNSATISFACTORY**

Because the replication approach to the ESCO model and EPC is not satisfactory and because a long-term business scheme and a mobilization strategy for financial resources have not been successfully implemented yet, the evaluation team is concerned about the sustainability of the ESCO business model in Rivne.

ESCO-Rivne, as a result of Phase 2 and Phase 1, can rely on a set of significant achievements towards the UNDP-GEF Programme framework objectives. Phase 2 successfully supported ESCO-Rivne in establishing its technical credibility for designing and implementing EE projects in the field of district heating power plants and distribution systems. In addition, Phase 2 and ESCO Rivne appropriately succeeded in establishing a trusting business relationship and an institutional arrangement scheme with the municipal sector and some budgeted municipal institutions, especially in the Rivne Oblast. Except for issues related to a lack of mobilization of financial resources, which has a direct impact on the sustainability of the business model and its replication, Phase 2 has implemented a sustainable capacity in regards to EC project implementation. Several social, ecological and health factors have been positively impacted by improvements to the district heating systems and these impacts will last for decades. Finally, ESCO-Rivne will benefit from a transfer of equipment ownership by the end of 2010. This asset, estimated at almost 3 million dollars, is also a sound "baseline" to secure the sustainability of ESCO-Rivne.

On the other hand, Phase 2 and ESCO-Rivne do not seem to have appropriately addressed the issue related to the mobilization of financial resources to secure access to commercial loans or soft loans from international development banks or bilateral development agencies. However, the evaluation team must mention that the project successfully dealt with some unexpected sources of funding, for instance: from the JICA, USAID and the private sector (Econoler).

The evaluation team previously mentioned that the successful and sustainable implementation of the ESCO business model is, in essence, related to its capacity to deal with EE investment projects as financial transactions. In that sense, ESCO-Rivne is still lacking the methodology and financial analytical skills to appropriately deal with financing issues, the financial analysis of projects and to secure its mid-term and long-term profitability.

The evaluator is currently concerned in this regards because the mobilization of financing is of the utmost importance to ensure the sustainability of ESCO-Rivne after UNDP/GEF funding comes to an end. On the other hand, the evaluator is not concerned about the sustainability of the outcomes related to energy savings and GHG emissions reduction resulting from the whole project.

At this point in time, the evaluator has rated project sustainability as **UNSATISFACTORY**.

4.3. Results

Technical risk identified in 2005: actual emissions reduction and energy savings could be lower than expected.

Implementation of the Phase 2 investment program will result in reducing about 2.8 million tons of GHG emissions in CO₂ equivalent over the project lifetime. The actual situation is probably different because the direct and post-project direct impacts amount for less than 50 kton and the evaluation team has not been in a position to determine the indirect impacts resulting from other projects in other cities or oblasts in Ukraine.

Implementation risk, or the risk that the project will not be fully implemented even though necessary resources will have been engaged. In terms of costs and expenses, the project managed the risk appropriately. The project did not face unexpected costs; on the contrary, the evaluator figured that an amount of more than US\$200,000 is still available for the implementation of additional activities or the strengthening of current activities.

Credit risk: non applicable because the project did not manage its investments through commercial credits from financial institutions. After more than 6 years operation, ESCO-Rivne has been paid by the energy end-users in accordance with expectations.

Price risk: tariffs are revised once a year. ESCO received approval for new tariffs every year but tariffs are still under the standard tariffs paid to other energy suppliers in Rivne (Kummonenergia as an instance). Because of the low tariff paid to ESCO-Rivne, the overall company cost-effectiveness is lower than it should be taking into consideration the direct investments made over the last 5 years.

Attainment of Outcomes/ Achievement of Objectives (R):

Two Outcomes, Outcome 1 (*To expand ESCO operations through implementation of Rivne City-wide/Oblast energy efficiency activities*) and Outcome 2 (*To facilitate ESCO-Rivne operations through financing of activities having long payback periods*) have been rated **Marginally SATISFACTORY** (see comments at Sections 4.2.1, 1.1 and 4.2.12).

Outcome 3 (*Replication of project experience/best practices and lessons learned throughout Ukraine and in other CIS countries*) and Outcome 4 (*To reduce perceived investment risks in*

order to facilitate ESCO-Rivne's expansion of activities) have been rated **UNSATISFACTORY**(see comments at Sections 4.2.1.3 and 4.2.1.4).

In terms of gender impact, this component is Highly **SATISFACTORY**. The gender equality component of energy efficiency projects includes reduction of childhood sickness rates due to the provision of quality hot water and heat supply services to the Rivne population, thus allowing women to lead a more active life and significantly cut the total number of sick - leaves taken by women to care for their sick children. The total coverage by project activity, including those generated by the projects, is enhanced quality of life for around 300,000 people, including a 805-bed municipal hospital (750 out-patients per day) servicing 54,700 Rivne residents, a 150-bed maternity hospital (200 out-patients per day), permanent hot water supply to 100,000 people, improved cold water supply to 40,000 people.

Conclusion

The evaluation team is still concerned about the sustainability of the ESCO business model implemented in Rivne. Other evaluation reports (from 2004) highlighted the same point: *no sustainability of ESCO business model without cost-effectiveness of investment projects and in the absence of a financial scheme and financial arrangement with investors and financial institutions.*

In regards to replication, the evaluation team is concerned because, in the absence of sound financial backing from project partners and/or financial institutions, similar EC projects as well as the current business model (ESCO) cannot be easily replicated in Ukraine or elsewhere in CIS countries.

In essence, the recommendation related to project extension (12 months) is required to set up the needed financial arrangements and partnerships with investors and financial institutions. If the UNDP leaves the project as it is now, ESCO-Rivne will be just another district heating utility company, not an ESCO.

5. Recommendations

See Section 1.3.5

6. Lessons learned

See Section 1.3.4

7. Follow-up of previous Recommendations

The Mid-term Evaluation team made (September 2009) recommendations that can be summarized as follows:

- (i) the replication approach;
- (ii) the sustainability of the ESCO as a business model in the municipal sector;
- (iii) improvements in terms of the financial investments, management, resources mobilization and financial analysis, and
- (iv) securing an agreement with the major stockholder (Rivne Municipality) in regards to the selection criteria for investment projects.

The practical capacity building, hands-on training and support to ESCO-Rivne (project cost breakdown structure, financial analysis, impact monitoring and bankable documents) were

provided within the twinning exercise with an international ESCO. The methodology and reporting improvements have been addressed with regards to investment grade audits and/or feasibility studies.

Additional support for the mobilization of financial resources within the framework of the twinning arrangement with the international ESCO was provided and the practical exercise was performed together with the international ESCO (an application for financing from IFI has been submitted).

The required adjustments to the twinning partner's Work Plan to include the required additional hands-on training and appropriate guidelines related to financial issues and impact monitoring have been put in place. The cost breakdown structure (Including capital costs, reasonable profits and investment risk premiums in the total investment costs) has been revised, however the tariff regulations policy is to be addressed at the law-make level.

An Investment Advisor has been engaged for the development of the investment strategy and action plan with the aim of improving the investment decision-making process and preparing an agreement in regards to an appropriate investment decision-making criteria and the post-Phase 2 Strategy is to be outlined by taking into consideration, to an extent, the likely investor requirements.

The project Final Evaluation has been carried out instead of a MTE Follow-up because of the short timeframe between the MTE and Terminal Evaluation.

The PMU is still dealing with the CO management in regards to project extension. Discussions are still ongoing and the decision is pending.

Appendix 1: List of Projects Completed

List of EE investment projects completed and in the pipeline as of 22 June 2010

No	Contract or PO No	Date Expected for an agreement	Contract name / Description of work	Client	Contract Value, USD	Actual disbursement status	UNDP project commitments	Notes
1	2007/68		Turnkey supply and installation of Boiler Plant for Humanitarian Gymnasia in the City of Rivne located at 17 Sofia Kovalevska St.		466 009,59	466 009,59	0,00	Completed
2	2008/41	2008-10-17	Internal Heating Mains Ablution in Humanitarian Gymnasia Complex, located at 17 S. Kovalevska St. in Rivne and Maternity hospital #2		39 273,25	39 273,25	0,00	Completed
3	2008/50	2008-12-09	Procurement of equipment and materials with installation works for the arrangement of manifold (pipeline) from the crossroad of Naberezhna and Kavkazska Streets along the Naberezhna St. and Mira Avenue up to the boiler plant located at 26-V Kikvidze St. in the City of Rivne		417 545,42	417 545,42	0,00	Completed
4	2009/025	2009-08-21	Turn-key supply of equipment and materials with installation works for the arrangement of the Combine Heat and Power Plant (further CHP Plant) at Makarova 41 Str., in the City of Rivne, Ukraine.		1 093 570,00	984 213,00	109 357,00	Installation works completed
5	2009/029	2009-09-30	Rehabilitation of the Boiler Plant Polisska Str., 5-B in the City of Rivne with installation of the biomass (waste wood-chips) burning boiler 550 kW/h; 0.6 Gcal/h		249 770,00	199 816,00	49 954,00	Main equipment supplied
6	PO UKR 10-0000010795	2009-11-19	Supply of main equipment for reconstruction of the individual boiler plant at the secondary school of Radyanske village, Mlyniv rayon, Rivne oblast		9 615,52	9 615,76	0,00	Completed
7	2010/04	2010-03-15	Rehabilitation of the Boiler Plant Kurchatova Str., 54-A in the City of Rivne with installation of the biomass (wood-chip) burning boilers		232 014,00	92 805,60	139 208,40	Design developed
8			Reconstruction of heating system at Rivne children's hospital with installation of individual boiler plant		238 000,00	0,00	0,00	Tender to be announced
9			Reconstruction of boiler plant at Oleksandriya rayon hospital, 0,4 MW		100 000,00	0,00	0,00	Tender to be announced
TOTAL					2 845 797,78	2 209 278,62	298 519,40	

Appendix 2: Itinerary - List of persons interviewed

Mission Agenda and Work Plan / May-June 2010

DATE	DESCRIPTION	VENUE	OUTPUT
May 26 to June 11, 2010	Documents review.	Home Office	Proper project understanding and site presence preparation, questionnaires and guidelines. Draft Agenda Questionnaires
Sunday June 13	Arrival to Kiev at 22:50 Flight SU 185C from Moscow	Kiev	Please book me a Hotel.
Monday , June 14 am and pm	Planning: Kick-off meetings and finalization of agenda	UNDP Country Office	<ul style="list-style-type: none"> - Additional guidelines from the UNDP - Senior Program manager: particular concerns and FE focus + additional information and actual implementation status. - FE Implementation and deliverable calendar (update) - UNDP Ukraine planning in regards to GEF 5. Is there some project UNDP Uk intend to submit to GEF 5 related to EE and/or ESCO - Site presence final mission agenda
9:00	Kick-off meeting with the project staff: Project Manager – Mr. Alexey Paschenko Project Reporting and monitoring assistant – Ms. Natalia Olshanska Project Procurement Assistant – Mr. Ivan Dekhtiar	Project office in Kiev	
12:00	Briefing with Senior Programme Manager Mr. Sergei Volkov	Project office in Kiev	
14:00 – 18:00	Work in the office - adjusting the mission agenda	Project office in Kiev	
17:00 – 18:00	Working meeting with Project Reporting and monitoring assistant – Ms. Natalia Olshanska on project's financial indicators	Project office in Kiev	
Tuesday , June 15	Discussion and project status review toward GEF's objectives and Ukrainian's expectations.	Project office in Kiev	
9:00 – 12:00	Improving the FE questionnaires and other materials useful for FE	Project office in Kiev	
14:00 – 18:00	Meeting with PM – Mr. Alexey Paschenko and M&RS – Ms. Natalia Olshanska	Project office in Kiev	Updated info on Outputs-Outcomes and Impacts: 1) Implementation <ul style="list-style-type: none"> - assess the implementation of the project in terms of quality and timeliness of inputs and efficiency and effectiveness of activities

			<p>carried out</p> <ul style="list-style-type: none"> - assess the effectiveness of management as well as the quality and timeliness of monitoring and backstopping by all parties to the project - assess the Project team's use of adaptive management in project implementation and the Project team's fulfillment of management responses to evaluation recommendations made during the mid-term evaluation in September 2009 <p>2) Outputs-Outcomes and Impacts:</p> <ul style="list-style-type: none"> - assess the achievement of the immediate objectives and the contribution to attaining the overall objective of the project. - to what extent the extent the implementation of the project has been inclusive of relevant stakeholders and has been able to link and establish a close collaboration with major stakeholders in Rivne, and in some other Oblasts. - To what extent the Project did impact some unexpected activities or initiatives carried out by projects partners or others. <p>3) Project Performance Indicators:</p> <ul style="list-style-type: none"> - assess the achievement of indicators and review the work plan, planned duration and budget of the project. - others
Wednesday June 16 am	Discussion and review of Ostrog project – project developed under external financing scenario	Project office in Kiev	
9:00 – 12:00	Work on questionnaires and additional info request related to investment projects already made and GHG emissions reduction	Project office in Kiev	
12:30	Meeting with IBSER and NEFCO representatives – Mr, Volodymyr Vysotskyiv, Manager of PPP projects (IBSER), Ms. Julia Shevchuk, Chief technical advisor for Ukraine (NEFCO)	Project office in Kiev	<p>Understanding of role and involvement of IBSER for supporting ESCO-Rivne Project.</p> <p>Legal and Regulation barriers (issues) for implementing Energy Efficiency projects in a central budgeted city. Link and approval procedures (Ministry of Finance, and others).</p> <p>Proposed scenario for implementing EE project with municipality as a client under third party financing</p> <p>Understanding to what extend Ostrong Municipality is in a position to deal with ESCO-Rivne in regards to the installation of new boilers for</p>

			kindergartens.
Thursday June 17	Trip to Rivne		
16:00 – 17:00	Meeting with Ms. Nina Veselska, ESCO-Rivne head of the board to explain the purpose and methodology of the Final Evaluation.	ESCO-Rivne office in Rivne	Presented and discussed mission agenda, the FE methodology and purpose. Explained the required input from ESCO Rivne, and proceed with the evaluation of the ‘management arrangement’ and lesson learn from that arrangement. Core issues of barriers removals discussed: 1. Difficulties in arranging financing for efficiency projects; 2. Institutional constraints; 3. The lack of capacity and experience in preparing, implementing and managing energy efficiency projects; 4. The high transaction costs for relatively small energy efficiency projects; 5. The lack of information about existing opportunities for energy efficiency.
17:00-18:00	Meeting with ESCO-Rivne key staff with the purpose to address major issues related to ESCO-Rivne financial sustainability, discuss and request necessary data to look at the key options for barriers removal: Ms. Nina Veselska – Head of the board Mr. Anatoliy Chaban – Technical director Ms. Svitlana Kondray – Chief accountant Ms. Tamila Yakobchuk - Economist	ESCO-Rivne office in Rivne	Discussions on major barriers that was not removed due to fiscal, legal and political reasons. Feedback received on the prepared checklist.
Friday June 18	Meetings with project’s stakeholders		-
10:00	Meeting with Mr. Anatoliy Chaban – Technical director	ESCO-Rivne office in Rivne	-
11:00	Meeting with ESCO-Rivne management and finance department	ESCO-Rivne office in Rivne	-
11:30	Meeting with project NPD (Rivne deputy mayor) – Mr.	Rivne	

	Oleksiy Khmyletskyi	municipality	
16:00 – 18:00	Work with project team	ESCO-Rivne office in Rivne	Verified methodology for CO2 emissions reduction estimation.
Saturday-Sunday:			
Monday June 21	Work with project and ESCO-Rivne team		
Tuesday June 22	Meeting with NEA and ESCO Investment Advisor		
9:00 – 10:00	Meeting with Mr. Grigorijs Krupnikovs (Gregory Krupnikov) ESCO-Rivne Investment Advisor (participated by project's team)	ESCO-Rivne office in Rivne	Shared (by ESCO Investment Advisor) preliminary findings and priority issues to be solved by ESCO-Rivne with regard to investor attraction process
10:00 – 11:00	Meeting with Mr. Gregory Krupnikov, ESCO-Rivne Investment Advisor and Ms. Nina Veselska (participated by project's team)	ESCO-Rivne office in Rivne	Discussed major issues identified by the Investor Advisor, recommendations to be considered
12:00 – 13:00	Meeting with Rivne mayor (Head of NEA) Mr. Volodymyr Khomko (participated by Mr. Gregory Krupnikov, Ms. Nina Veselska and project's team)	Rivne municipality	Presented the FE purpose and expected output. Presented major issues identified by the Investor Advisor. Received mayors understanding and support in the investor attraction issues.
Wednesday June 23			
10:00 – 13:00	Evaluation activities, work with project team		GHG emissions evaluation
15:00 – 16:30	The project Board meeting (agenda attached): participated by Mr. Sergei Volov, UNDP Senior Programme Manager Mr. Oleksiy Khmyletsky, Project NPD Ms. Nina Veselska, ESCO-Rivne head of the board Mr. Alexey Paschenko, Project manager Ms. Nataliya Olshanska, Project monitoring and reporting specialist	Rivne municipality	Presentation of main conclusions, recommendations and lessons learned
Thursday June 24			
9:00 – 12:00	Evaluation activities, work with project team		Evaluation of the ESCO-Rivne income stream resulted from GEF investments (under Chauffage contracts), tariff structure, GHG emissions reduction potential.
14:00 – 18:00	Travel to Kyiv		
Friday June 25			
9:30 – 11:00	Final debriefing with UNDP Country director Ms.		

	Ricarda Rieger participated by Mr. Sergei Volov, UNDP Senior Programme Manager and Mr. Alexey Paschenko, Project manager		
11:00 – 18:00	Additional documents review and final evaluation report		
Saturday June 26			
08:00 a.m.	Departure to home office.		

Appendix 3 – Questionnaires

ESCO Rivne

For the purpose of our upcoming meeting, please have a look to the following priority topics I would like to address:

1. **Assets Ownership Transfer:** In accordance with the whole project agreement, UNDP is committed to transfer the asset paid by the project (GEF) at the end of the project timeframe. This asset is in essence, equipment already installed for which the project paid about (let's say) 3 million USD. Some investments have been made 5 years ago and some other this year and before. In the perspective of the UNDP/GEF, the book value is based on the original value at the moment UNDP paid for (no depreciation). I guess the transfer protocol will be clear in that matter. From the moment the asset will be transferred, ESCO will benefit of a certain fiscal depreciation of this equipment (fixed by the tax dept). The question is the following:

Until now, what has been the fiscal benefit from the asset already transferred from Project Phase 1? In other words, if ESCO–Rv doesn't pay tax (because benefits are too low), the fiscal depreciation benefit is zero. What is the actual fiscal situation in 2010 in regards to your taxable profits?

Based on information I got, it seems to me that the energy supply tariff applied doesn't include the standard provision for depreciation of equipment (it depends of equipment and national regulation or acceptable accounting rules, and business negotiation between energy supplier and client). *Is it the actual situation (did you include the depreciation into the tariff)?*

For the purpose of your fiscal benefit (if any), did you already estimate the actual value of the upcoming asset transfer. Such as I mentioned above, the value of the transferred asset is not the same, depending of the perspective (UNDP or ESCO). Question: *What is the fiscal value of the transferred asset in accordance with the national regulation?*

From the moment you will be the official owner of the asset, do you intend including the remaining depreciation scheme into the energy tariff? In such a case (I do recommend to do so), what will be the rate of depreciation you intend to apply? What should be the impact on the tariff? Are you in a position for renegotiating the rate at the moment of the asset transfer or when?

2. **Business Plan:** The key issues for making ESCO-Rivne financially viable and sustainable are numerous, but the priority points are related resource mobilization and financial performance of your investments. Financial resource mobilization is attractive to investors at the condition ESCO is cost-effective (profits from services (O&M) and investment (equipment)). In the Financial Institution's perspective, the existing worthy collateral is a basic condition for providing lending to a borrower. In my opinion, and based on my experience in that field, the equipment already installed and in operation is not a very attractive collateral for a financial institution. In fact, nobody can remove a boiler from the facility if the energy end-user is not in a position to pay for the energy supply. A non-payment situation is however very improbable because of the nature and the quality of your client. That is to say, your asset you can use as collateral is your energy supply contract and the related income stream spread on a certain timeframe. Such an asset (contracts) is good and acceptable collateral at the condition the income stream is appropriately figured.
Question: Could you explain the way you intend to be more attractive for investors and financial institutions, the way you intend: (i) to finance the equipment replacement over their life-cycle duration, (ii) to finance new projects and your objectives in term of benefits and dividend (profits sharing) with your shareholders? At the moment (hopefully I am wrong), your major shareholder (Municipality) is directly withdrawing its benefit from the low tariff you apply? That's perhaps not the best way for attracting new investors!
3. **Ostrong Project:** Actions undertaken for implementing Ostrong Project: Could you provide me with information related to remaining barriers, delay, procedures, business arrangements and institutional arrangements related to that investment project. Deadline and financial scheme.
4. **Environmental Impacts:** Please could you fill in the attached table related to cumulative GHG emissions avoided.

Meeting with IBSER- Questions and Priority Topics to be addressed:

- Role and involvement for supporting ESCO-Rivne Project.
- Legal and Regulation barriers (issues) for implementing Energy Efficiency projects in a central budgeted city. Link and approval procedures (Ministry of Finance, and others).
- To what extent Ostrong Municipality is in a position to deal with ESCO-Rivne in regards to the installation of new boilers for kindergartens (2). There are two basic options for implementing such a project:
 1. ESCO act as an Engineering Company: Project design - equipment purchasing – Commissioning. In that scheme Ostrong is required to pay ESCO at the Commissioning Stage, or some prior payment milestones, but at the moment of commissioning Ostrong should proceed with the final payment. Does the MoF require to give its go ahead.
 2. In the situation where ESCO carries out the project in accordance with the ESCO scheme (Project design + equipment purchasing + Commissioning + financing + Maintenance and Operation + energy billing over a fixed period of time): Does Ostrong can be in a position (in regards to regulation) to take such a long-term commitment for that purpose?
- Assets Transfer from the UNDP/GEF to ESCO-Rv (Necessary legal and fiscal issues):
 1. In accordance with the whole project agreement, UNDP is committed to transfer the asset paid by the project (GEF) at the end of the project timeframe. This asset is in essence, equipment already installed for which the project paid about (let's say) 3 million USD. Some investments have been made 5 years ago and some other this year and before. In the perspective of the UNDP/GEF, the book value is based on the original value at the moment UNDP paid for (no depreciation). I guess the transfer protocol will be clear in that matter. From the moment the asset will be transferred, ESCO will benefit of a certain fiscal depreciation of this equipment (fixed by the tax dept). The question is the following: *What must be the fiscal value of the transferred asset?* In fact, the actual value is not the original cost paid by UNDP. *Does the regulation in Ukraine enable the project beneficiary (ESCO) to immediately write-off a percentage of the original value (must be evaluated equipment/project-based) with the purpose of considering the actual value rather than the original value?* In accordance with the ODA agreement between GoU and UNDP, *do you know if there are some requirements for securing the transferred assets during a certain period of time after the transfer has been preceded?* In other word, is there a specific regulation in that regards?
 2. Until now, ESCO did not include the depreciation of this equipment into the rate paid by the energy end-users. In other words, ESCO considered this equipment like no value! I guess the reason is because ESCO paid nothing for the equipment. Such a situation is financially unproductive, for the least! *Is such a situation required by some ODA regulation applied in Ukraine, or others?*
 3. Immediate support (as advisor) from IBSER: *Is IBSER in a position for providing an official Advice to ESCO Rivne in that matter (procedure and regulation related to asset transfer, and current ODA regulation, if any)?*

Meeting with the National Project Director

Rivne - June 18, 2010

Priority Topics to review

1. In your opinion, what are the majors remaining barriers ESCO-Rivne is still facing for fully expending its market and implement new projects in Rivne (Technical-Institutional and Financial barriers):
2. At the moment, the energy supply rate paid to ESCO is under the market value. What is your position in this regards for promoting higher tariffs?
3. Institutional and Business Arrangements:
In your opinion, do you feel the business arrangement between ESCO-Rivne and Kommonenergia is still appropriate? In other words, is there some improvements to implement for making the business arrangement more efficient, if any.

Appendix 4: List of Persons met

List of stakeholders met

THE PERSONS MET

UNDP

1. UNDP Country Director Ms. Ricarda Rieger
2. UNDP Senior Programme manager Mr. Sergey Volkov

Project team

3. Project Manager Mr. Alexey Paschenko
4. Project Monitoring & Reporting Specialist Ms. Nataliya Olshanska
5. Project procurement Assistant Mr. Ivan Dekhtiar

NEA (Rivne municipality)

6. Head of NEA, Rivne mayor Mr. Volodymyr Khomko
7. National Project Director, Rivne deputy mayor Mr. Oleksiy Khmyletsykyi

ESCO-Rivne

8. ESCO-Rivne Head of the board Ms. Nina Veselska
9. ESCO-Rivne Technical director Mr. Anatoliy Chaban
10. ESCO-Rivne Economist/Financial manager Ms. Tamila Yakobchuk
11. ESCO-Rivne Chief accountant Ms. Svitlana Kondray
12. ESCO-Rivne lawyer Ms. Liudmila Tryhubets'
13. ESCO-Rivne Engineer Ms. Svitlana Dorofeeva

ESCO-Rivne Consultants

14. Investment Advisor Mr. Grigorijs Krupnikovs (Gregory Krupnikov)

IBSER

15. Manager of PPP projects Mr. Volodymyr Vysotskyiv

NEFCO

16. Chief technical advisor for Ukraine Ms. Julia Shevchuk

Appendix 5: List of Documents Reviewed

- Project Document
- APR 2006 - to 2009
- PIR 2006 to 2009
- QPR 2008 – 2009 – 2010
- MTE Report 2009

Project Terminal Evaluation

Terms of Reference

UNDP/GEF Project

“PIMS 3056 CC FSP Removing Barriers to Greenhouse Gas Emissions Mitigation through Energy Efficiency in the District Heating System, Phase 2”

I. INTRODUCTION

a) UNDP/GEF Monitoring and Evaluation (M&E) policy

The Monitoring and Evaluation (M&E) policy at the project level in UNDP/GEF has two overarching objectives:

- a) promote accountability for the achievement of GEF objectives through the assessment of results, effectiveness, processes and performance of the partners involved in GEF activities. GEF results will be monitored and evaluated for their contribution to global environmental benefits; and
- b) promote learning, feedback and knowledge sharing on results and lessons learned among the GEF and its partners, as basis for decision-making on policies, strategies, program management, and projects and to improve knowledge and performance (paragraph 1).

In accordance with UNDP/GEF M&E policies and procedures, all full-sized and medium-sized projects supported by the GEF should undergo a terminal evaluation upon completion of implementation.

This Terminal Evaluation is initiated by the UNDP Ukraine as the Implementing Agency for this project and is aimed to provide a comprehensive assessment of the project performance and achievement of project objectives; as well as provide lessons learned and recommendations for future projects, policies, or portfolios.

This evaluation is to be undertaken taking into consideration the GEF Monitoring and Evaluation policy (<http://thegef.org/MonitoringandEvaluation/MEPoliciesProcedures/mepoliciesprocedures.html>) and the Guidelines for GEF Agencies in Conducting Terminal Evaluations (www.gefweb.org/uploadedFiles/Policies-TEguidelines7-31.pdf).

b) Project overview

Removing Barriers to Greenhouse Gas Emissions Mitigation through Energy Efficiency in the District Heating System, Phase 2 project has been launched in June 2006, following successful completion of the activities under Phase 1 “Climate Change Mitigation in Ukraine through Energy Efficiency in Municipal District Heating (Pilot Project in Rivne)” implemented in 2002-2005 GEF-funded project with the objective of addressing a key issue of reducing greenhouse gas emissions through large-scale improvements in energy efficiency in Ukraine's communal heat supply sector. Phase 1 significant achievements allowed satisfying the criteria that needed to be met prior to accessing funding for Phase 2.

The project objective is to reduce overall fossil fuel consumption and associated greenhouse gas (GHG) emissions by removing barriers to supply and demand side energy efficiency improvements in district heating systems in the main cities of Ukraine. GEF participation will reduce major existing barriers in one pilot city and provide for the replication of defined approaches and measures in other main cities of Ukraine.

The project's goal is to address a key issue in the reduction of greenhouse gas emissions through large-scale improvements in energy efficiency in Ukraine's communal heat supply sector. This is proposed to be achieved through the setting up of a municipal energy service company (ESCO) in Rivne City, providing it with technical and capacity development support to become fully operational, to provide it with hands-on experience through the implementation of pilot projects and to assist it in preparing a strategic plan for implementing energy efficiency activities city-wide in Rivne. All these were undertaken during Phase 1.

Under Phase 2, ESCO-Rivne company is receiving additional support to implement a city-wide programme for energy efficiency activities in municipal district heating, to expand its reach beyond the borders of the city, to implement activities which require longer payback periods for which financing may not be readily available, to design and implement finance guarantee and risk mitigation instruments, and to promote the adoption and implementation of project experience and lessons learned throughout Ukraine and in other CIS countries.

The global environmental objective is to be achieved through the removal of the following main existing barriers to energy

efficiency improvement in the communal heat supply sector:

- 1) difficulties in arranging financing for efficiency projects;
- 2) institutional constraints;
- 3) lack of capacity and experience in preparing, implementing and managing energy efficiency projects;
- 4) high transaction costs for relatively small energy efficiency projects;
- 5) lack of information about existing opportunities for energy efficiency.

In line with the Government's priorities, this project addresses a key issue in the reduction of greenhouse gas emissions through large-scale improvements in energy efficiency in Ukraine's communal heat supply sector. These improvements is to result from a four-part approach:

- 1) capacity building to create the basis for systematic energy efficiency activities at the local level;
- 2) an integrated approach of supply and demand-side improvements to achieve maximum fuel savings and emissions reduction;
- 3) attraction of external investment resources for an energy efficiency programme in a pilot city (Rivne); and,
- 4) project-specific replication measures in other parts of the country, including development of relevant procedures, guidelines, information materials and their dissemination, and public awareness-raising through the involvement of NGO's, in particular those concerned with environmental and energy efficiency problems. The project will involve establishing a privately-run energy service company (ESCO) as an innovative mechanism for financing energy efficiency activities in Ukraine at both municipal and regional levels, and, eventually, at the national level.

The Project has four primary outcomes summarized below:

- Outcome 1: ESCO operations are expanded to cover Rivne City-wide/Oblast energy efficiency activities.
- Outcome 2: ESCO-Rivne operations are facilitated through financing of activities having long payback period.
- Outcome 3: ESCO-Rivne operations are promoted through the design of instruments to minimise investment risks.
- Outcome 4: Project experience/best practices and lessons learned are replicated throughout Ukraine and in other CIS countries.

In accordance with UNDP/GEF M&E policies and procedures, all projects with long implementation period are strongly encouraged to conduct mid-term evaluations. The mid-term evaluation for the project was conducted in September 2009. The mid-term evaluation made the following ratings and conclusions in its report:

The overall rating of the project in terms of its progress is “**Satisfactory**” (S), mainly due to the fact that it is progressing at a good pace in the attainment of a number of targets set in the Prodoc although there is a need for adjustments to various design and implementation issues.

In general, major activities related the project implementation process, financial management and level of achievement towards the objectives are satisfactory. On the other hand, the evaluation team pointed out some weaknesses, especially in terms of the replication approach, sustainability and financial profitability of the EE projects implemented in Phase 2.

The likely sustainability of projects is marginally satisfactory in spite of some major achievements, e.g. (i) the information sharing network in the municipal sector in Rivne and in some other Oblasts; (ii) already delivered and upcoming training, and (iii) quality equipment already installed. Phase 2 is now required to confirm that financial resources will be in place to continue project activities after the completion of Phase 2.

The evaluation team has drawn up a list of 10 recommendations, which are related to (i) the replication approach; (ii) the sustainability of the ESCO as a business model in the municipal sector; (iii) improvements in terms of the financial investments, management, resources mobilization and financial analysis and (iv) securing an agreement with the major stockholder (Rivne Municipality) in regards to the selection criteria for investment projects.

Project MTE report is available at: <http://www.undp.org.ua/en/publications>

II. PURPOSE OF TERMINAL EVALUATION

The overall purpose of the evaluation is to measure the effectiveness and efficiency of project activities in relation to the stated objectives endorsed by the GEF, including any agreed changes in the objectives during project implementation and any other results.

Terminal evaluation has the following complementary purposes:

- a) To promote accountability and transparency, and to assess and disclose levels of project accomplishment;
- b) To synthesize lessons learned that may help improve selection, design and implementation of future GEF activities.

- c) To provide feedback on issues that are recurrent across the portfolio and need attention, and on improvements regarding previously identified issues.

III. OVERALL SCOPE OF TERMINAL EVALUATION

The *GEF Monitoring and Evaluation Policy*, minimum requirement 3, specifies that terminal evaluation shall assess, at minimum:

- achievement of outputs and outcomes and provide ratings for the targeted objectives and outcomes;
- likelihood of sustainability of outcomes at project termination, and provide rating for this.

Evaluations in the GEF explore five major criteria:

- (i) Relevance – the extent to which the activity is suited to local and national development priorities and organizational policies, including changes over time.
- (ii) Effectiveness – the extent to which an objective has been achieved or how likely it is to be achieved.
- (iii) Efficiency – the extent to which results have been delivered with the least costly resources possible.
- (iv) Results – the positive and negative, and foreseen and unforeseen, changes to and effects produced by a development intervention. In GEF terms, results include direct project outputs, short-to medium term outcomes, and longer-term impact including global environmental benefits, replication effects and other, local effects.
- (v) Sustainability – the likely ability of an intervention to continue to deliver benefits for an extended period of time after completion. Projects need to be environmentally as well as financially and socially sustainable.

The Terminal Evaluation serves as an agent of change and plays a critical role in supporting accountability. The emphasis of the evaluation should be the following:

Project indicators The evaluators will assess the achievement of indicators and review the work plan, planned duration and budget of the project.

Implementation The evaluation will assess the implementation of the project in terms of quality and timeliness of inputs and efficiency and effectiveness of activities carried out. Also, the effectiveness of management as well as the quality and timeliness of monitoring and backstopping by all parties to the project should be evaluated. In particular, the evaluation is to assess the Project team's use of adaptive management in project implementation and the Project team's fulfillment of management responses to evaluation recommendations made during the mid-term evaluation in September 2009.

Project outputs, outcomes and impact The evaluation will assess the outputs, outcomes and impact achieved by the project as well as the likely sustainability of project results. This should encompass an assessment of the achievement of the immediate objectives and the contribution to attaining the overall objective of the project. The evaluation should also assess the extent to which the implementation of the project has been inclusive of relevant stakeholders and to which it has been able to create collaboration between different partners. The evaluation will also examine if the project has had significant unexpected effects, whether of beneficial or detrimental character.

The Terminal Evaluation will also cover the following aspects:

1. Project concept/design, relevance and strategy

1.1 Project relevance, country ownership/drivenness (R): the extent to which the project is suited to local and national development priorities and organizational policies, including changes over time as well as the extent the activities contribute towards attainment of global environmental benefits:

- a. Is the project concept in line with the sectoral and development priorities and plans of the country?
- b. Are project outcomes contributing to national development priorities and plans?
- c. How and why project outcomes and strategies contribute to the achievement of the expected results.
- d. Examine their relevance and whether they provide the most effective way towards results.
- e. Do the outcomes developed during the inception phase still represent the best project strategy for achieving the project objectives (in light of updated underlying factors)? *Consider alternatives.*
- f. Were the relevant country representatives, from government and civil society, involved in the project preparation?
- g. Does the recipient government maintain its financial commitment to the project? Has the government approved policies or regulatory frameworks in line with the project's objectives?

1.2 Preparation and readiness:

- a. Are the project's objective and components clear, practicable and feasible within its timeframe?

- b. Were the capacities of executing institution and counterparts properly considered when the project was designed?
- c. Were lessons from other relevant projects properly incorporated in the project design?
- d. Were the partnership arrangements properly identified and the roles and responsibilities negotiated prior to project approval?
- e. Were counterpart resources (funding, staff, and facilities), enabling legislation, and adequate project management arrangements in place at project entry?

1.3 Stakeholder involvement (R):

- a. Did the project involve the relevant stakeholders through information-sharing, consultation and by seeking their participation in the project's design?
- b. Did the project consult and make use of the skills, experience and knowledge of the appropriate government entities, NGOs, community groups, private sector, local governments and academic institutions in the design of project activities?

1.4 Underlying factors/assumptions:

- a. Assess the underlying factors beyond the project's immediate control that influence outcomes and results. Consider the appropriateness and effectiveness of the project's management strategies for these factors.
- b. Re-test the assumptions made by the project management and identify new assumptions that should be made.
- c. Assess the effect of any incorrect assumptions made by the project.

1.5 Management arrangements (R):

- a. Were the project roles properly assigned during the project design?
- b. Are the project roles in line with UNDP and GEF programming guidelines?
- c. Can the management arrangement model suggested by the project be considered as an optimum model? If no, please come up with suggestions and recommendations.

1.6 Project budget and duration (R):

- a. Assess if the project budget and duration were planned in a cost-effective way?

1.7 Design of project M&E system (R):

- a. Examine whether or not the project has a sound M&E plan to monitor results and track progress towards achieving project objectives.
- b. Examine whether or not the M&E plan includes a baseline (including data, methodology, etc.), SMART indicators and data analysis systems, and evaluation studies at specific times to assess results and adequate funding for M&E activities.
- c. Examine whether or not the time frame for various M&E activities and standards for outputs are specified.

1.8 Sustainability:

- a. Assess if project sustainability strategy was developed during the project design?
- b. Assess the relevance of project sustainability strategy

1.9 Gender perspective:

Extent to which the project accounts for gender differences when developing and applying project interventions. How are gender considerations mainstreamed into project interventions?

2. Project implementation

2.1 Project's adaptive management (R):

- a. Monitoring systems
 - Assess the monitoring tools currently being used:
 - Do they provide the necessary information?
 - Do they involve key partners?
 - Are they efficient?
 - Are additional tools required?
 - Assess the use of the logical framework as a management tool during implementation and any changes made to it.
 - What impact did the retro-fitting of impact indicators have on project management, if such?
 - Assess whether or not M&E system facilitates timely tracking of progress towards project's objectives by collecting information on chosen indicators continually; annual project reports are complete, accurate and with well justified ratings; the information provided by the M&E system is used to improve project performance and to adapt to changing needs.

- b. Risk Management
 - Validate whether the risks identified in the project document and PIRs are the most important and whether the risk ratings applied are appropriate. If not, explain why.
 - Describe any additional risks identified and suggest risk ratings and possible risk management strategies to be adopted.
 - Assess the project's risk identification and management systems:
 - Is the UNDP-GEF Risk Management System³ appropriately applied?
 - How can the UNDP-GEF Risk Management System be used to strengthen the project management?
- c. Work Planning
 - Assess the use of routinely updated work plans.
 - Assess the use of electronic information technologies to support implementation, participation and monitoring, as well as other project activities.
 - Are work planning processes result-based⁴? If not, suggest ways to re-orientate work planning.
- d. Financial management
 - Consider the financial management of the project, with specific reference to the cost-effectiveness of interventions. (Cost-effectiveness: the extent to which results have been delivered with the least costly resources possible.). Any irregularities must be noted.
 - Is there due diligence in the management of funds and financial audits?
 - Did promised co-financing materialize (please fill out the co-financing form provided in Annex 1)?
- e. Reporting
 - Assess how adaptive management changes have been reported by the project management.
 - Assess how lessons derived from the adaptive management process have been documented, shared with key partners and internalized by partners.
- f. Delays
 - Assess if there were delays in project implementation and what were the reasons.
 - Did the delay affect the achievement of project's outcomes and/or sustainability, and if it did then in what ways and through what causal linkages?

2.2 Contribution of Implementing and Executing Agencies:

- b. Assess the role of UNDP and Rivne Municipality against the requirements set out in the UNDP Programme and Operations Policies and Procedures⁵. Consider:
 - Field visits
 - Participation in Steering Committees
 - Project reviews, PIR preparation and follow-up
 - GEF guidance
 - Operational support
- c. Consider the new UNDP requirements outlined in the UNDP Programme and Operations Policies and Procedures, especially the Project Assurance role, and ensure they are incorporated into the project's adaptive management framework.
- d. Assess the contribution to the project from UNDP and Rivne municipality in terms of "soft" assistance (i.e. policy advice & dialogue, advocacy, and coordination).
- e. Suggest measures to strengthen UNDP's soft assistance to the project management.

2.3 Stakeholder participation, partnership strategy (R):

- a. Assess whether or not and how local stakeholders participate in project management and decision-making. Include an analysis of the strengths and weaknesses of the approach adopted by the project and suggestions for improvement if necessary.
- b. Does the project consult and make use of the skills, experience and knowledge of the appropriate government entities, NGOs, community groups, private sector, local governments and academic institutions in the implementation and evaluation of project activities?
- c. Consider the dissemination of project information to partners and stakeholders and if necessary suggest more appropriate mechanisms.
- d. Identify opportunities for stronger partnerships.

2.4 Sustainability:

³ UNDP-GEF's system is based on the Atlas Risk Module. See the UNDP-GEF Risk Management Strategy resource kit, available as Annex XII at <http://www.undp.org/gef/05/monitoring/policies.html>

⁴ RBM Support documents are available at <http://www.undp.org/eo/methodologies.htm>

⁵ Available at <http://content.undp.org/go/userguide/results/project/>

- a. Assess the extent to which the benefits of the project will continue, within or outside the project scope, after it has come to an end; commitment of the government to support the initiative beyond the project.
- b. The evaluators may look at factors such as mainstreaming project objectives into the broader development policies and sectoral plans and economies.

The sustainability assessment will give special attention to analysis of the risks that are likely to affect the persistence of project outcomes. The sustainability assessment should also explain how other important contextual factors that are not outcomes of the project will affect sustainability. The following four dimensions or aspects of sustainability will be addressed:

- *Financial resources*: Are there any financial risks that may jeopardize sustenance of project outcomes? What is the likelihood of financial and economic resources not being available once the GEF assistance ends (resources can be from multiple sources, such as the public and private sectors, income generating activities, and trends that may indicate that it is likely that in future there will be adequate financial resources for sustaining project's outcomes)?
- *Socio-political*: Are there any social or political risks that may jeopardize sustenance of project outcomes? What is the risk that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained? Do the various key stakeholders see that it is in their interest that the project benefits continue to flow? Is there sufficient public / stakeholder awareness in support of the long term objectives of the project?
- *Institutional framework and governance*: Do the legal frameworks, policies and governance structures and processes pose risks that may jeopardize sustenance of project benefits? While assessing this parameter, also consider if the required systems for accountability and transparency, and the required technical know-how are in place.
- *Environmental*: Are there any environmental risks that may jeopardize sustenance of project outcomes? The terminal evaluation should assess whether certain activities will pose a threat to the sustainability of the project outcomes.

On each of the dimensions of sustainability of the project outcomes will be rated as follows:

- *Likely (L)*: There are no or negligible risks that affect this dimension of sustainability.
- *Moderately Likely (ML)*: There are moderate risks that affect this dimension of sustainability.
- *Moderately Unlikely (MU)*: There are significant risks that affect this dimension of sustainability
- *Unlikely (U)*: There are severe risks that affect this dimension of sustainability.

3. Project results (outputs, outcomes and objectives)

3.1 Progress towards achievement of intended outputs, outcomes/measurement of change:

Progress towards results should be based on a comparison of indicators before and after (so far) the project intervention (legal and regulatory frameworks, results of restoration activities, etc.) to the baseline ones.

The evaluation should specifically look into:

- Assessment of ESCO-Rivne company sustainability and potential reliability of ESCO mechanism nationwide;
- Validation of the adequacy and viability of various modalities of ESCO operation (engineering services including energy audit, financial services, utility);
- Validation of the energy efficiency interventions, completed, on-going, or proposed;
- Project's impact on improving effectiveness of the use of financial resources available for energy efficiency in communal sector.

To determine the level of achievement of project outcomes and objectives following three criteria should be assessed:

- *Relevance*: Are the project's outcomes consistent with the focal areas/operational program strategies and country priorities?
- *Effectiveness*: Are the actual project outcomes commensurate with the original or modified project objectives? In case the original or modified expected results are merely outputs/inputs then the evaluators should assess if there are any real outcomes of the project and if yes then whether these are commensurate with the realistic expectations from such a project.
- *Efficiency*: Is the project cost effective? Is the project the least cost option? Is the project implementation delayed and if it is, then does that affect cost-effectiveness? Wherever possible, the evaluator should also compare the cost-time vs. outcomes relationship of the project with that of other similar projects.

The evaluation of relevancy, effectiveness, and efficiency shall be as objective as possible and shall include sufficient and convincing evidences.

Outcomes and the whole project should be rated as follows for relevance, effectiveness, efficiency:

- *Highly Satisfactory (HS)*: The project has no shortcomings in the achievement of its objectives.
- *Satisfactory (S)*: The project has minor shortcomings in the achievement of its objectives.
- *Marginally Satisfactory (MS)*: The project has moderate shortcomings in the achievement of its objectives.
- *Marginally Unsatisfactory (MU)*: The project has significant shortcomings in the achievement of its objectives.
- *Unsatisfactory (U)*: The project has major shortcomings in the achievement of its objectives.
- *Highly Unsatisfactory (HU)*: The project has severe shortcomings in the achievement of its objectives

- *Highly Unsatisfactory (HU)*: The project has severe shortcomings in the achievement of its objectives.

IV. DELIVERABLES / PRODUCTS EXPECTED FROM THE TERMINAL EVALUATION

The key product expected from the terminal evaluation is a comprehensive analytical report in English on the evaluation of UNDP-GEF project “PIMS 3056 CC FSP Removing Barriers to Greenhouse Gas Emissions Mitigation through Energy Efficiency in the District Heating System, Phase 2” that should, in line with *The GEF Monitoring and Evaluation Policy*, minimum requirement 3, include:

- the basic data on the evaluation (when the evaluation took place, places visited, who was involved, the key questions, and the methodology- including application of the five evaluation criteria),
- basic data of the project, including actual GEF and other expenditures;
- lessons of broader applicability
- information regarding the composition and expertise of the evaluation team (in an annex)
- the ToR of the evaluation (in an annex).

The evaluation report outline/content should be structured as follows:

1. Executive summary

- Brief description of project
- Context and purpose of the evaluation
- Main conclusions, recommendations and lessons learned

2. Introduction

- Purpose of the evaluation
- Key issues addressed
- Methodology of the evaluation
- Structure of the evaluation

3. The project(s) and its development context

- Project start and its duration
- Problems that the project seek to address
- Immediate and development objectives of the project
- Main stakeholders
- Results expected

4. Findings and Conclusions

In addition to a descriptive assessment, all criteria marked with (R) should be rated using the following divisions: Highly Satisfactory, Satisfactory, Marginally Satisfactory, Marginally Unsatisfactory, Unsatisfactory, Highly Unsatisfactory. All ratings given should be properly substantiated.

4.1. Project Formulation

Conceptualization/Design (R). This should assess the approach used in design and an appreciation of the appropriateness of problem conceptualization and whether the selected intervention strategy addressed the root causes and principal threats in the project area. It should also include an assessment of the logical framework and whether the different project components and activities proposed to achieve the objective were appropriate, viable and responded to contextual institutional, legal and regulatory settings of the project. It should also assess the indicators defined for guiding implementation and measurement of achievement and whether lessons from other relevant projects (e.g., same focal area) were incorporated into project design.

Country-ownership/Driveness. Assess the extent to which the project idea/conceptualization had its origin within national, sectoral and development plans and focuses on national environment and development interests.

Stakeholder participation (R) Assess information dissemination, consultation, and “stakeholder” participation in design stages.

Replication approach. Determine the ways in which lessons and experiences coming out of the project were/are to be replicated or scaled up in the design and implementation of other projects (this also related to actual practices undertaken during implementation).

Other aspects to assess in the review of Project formulation approaches would be UNDP comparative advantage as IA for this project; the consideration of linkages between projects and other interventions within the sector and the definition of clear and appropriate management arrangements at the design stage.

4.2. Project Implementation

Implementation Approach (R). This should include assessments of the following aspects:

- (i) The use of the logical framework as a management tool during implementation and any changes made to this as a response to changing conditions and/or feedback from M and E activities if required.
- (ii) Other elements that indicate adaptive management such as comprehensive and realistic work plans routinely developed that reflect adaptive management and/or; changes in management arrangements to enhance implementation.
 - (iii) The project's use/establishment of electronic information technologies to support implementation, participation and monitoring, as well as other project activities.
 - (iv) The general operational relationships between the institutions involved and others and how these relationships have contributed to effective implementation and achievement of project objectives.
 - (v) Technical capacities associated with the project and their role in project development, management and achievements.

Monitoring and evaluation (R). Including an assessment as to whether there has been adequate periodic oversight of activities during implementation to establish the extent to which inputs, work schedules, other required actions and outputs are proceeding according to plan; whether formal evaluations have been held and whether action has been taken on the results of this monitoring oversight and evaluation reports.

Stakeholder participation (R). This should include assessments of the mechanisms for information dissemination in project implementation and the extent of stakeholder participation in management, emphasizing the following:

- (i) The production and dissemination of information generated by the project.
- (ii) Local resource users and NGOs participation in project implementation and decision making and an analysis of the strengths and weaknesses of the approach adopted by the project in this arena.
 - (iii) The establishment of partnerships and collaborative relationships developed by the project with local, national and international entities and the effects they have had on project implementation.
- (iv) Involvement of governmental institutions in project implementation, the extent of governmental support of the project.

Financial Planning: Including an assessment of:

- (i) The actual project cost by objectives, outputs, activities
- (ii) The cost-effectiveness of achievements
- (iii) Financial management (including disbursement issues)

(iv) Co-financing⁶

- Sustainability. Extent to which the benefits of the project will continue, within or outside the project domain, after it has come to an end. Relevant factors include for example: development of a sustainability strategy, establishment of financial and economic instruments and mechanisms, mainstreaming project objectives into the economy or community production activities.

Execution and implementation modalities. This should consider the effectiveness of the UNDP counterpart and Project Co-ordination Unit participation in selection, recruitment, assignment of experts, consultants and national counterpart staff members and in the definition of tasks and responsibilities; quantity, quality and timeliness of inputs for the project with respect to execution responsibilities, enactment of necessary legislation and budgetary provisions and extent to which these may have affected implementation and sustainability of the Project; quality and timeliness of inputs by UNDP and GoC and other parties responsible for providing inputs to the project, and the extent to which this may have affected the smooth implementation of the project.

4.3. Results

Attainment of Outcomes/ Achievement of objectives (R): Including a description *and rating* of the extent to which the project's objectives (environmental and developmental) were achieved using Highly Satisfactory, Satisfactory, Marginally Satisfactory, and Unsatisfactory ratings. If the project did not establish a baseline (initial conditions), the evaluators should seek to determine it through the use of special methodologies so that achievements, results and impacts can be properly established.

This section should also include reviews of the following:

Sustainability: Including an appreciation of the extent to which benefits continue, within or outside the project domain after GEF assistance/external assistance in this phase has come to an end.

- Contribution to upgrading skills of the national staff

5. Recommendations

- Corrective actions for the design, implementation, monitoring and evaluation of the project
- Actions to follow up or reinforce initial benefits from the project
- Proposals for future directions underlining main objectives

6. Lessons learned

This should highlight the best and worst practices in addressing issues relating to relevance, performance and success.

7. Evaluation report Annexes

Evaluation TORs

Itinerary

List of persons interviewed

Summary of field visits

List of documents reviewed

Questionnaire used and summary of results

Comments by stakeholders (only in case of discrepancies with evaluation findings and conclusions)

V. METHODOLOGY OR EVALUATION APPROACH

An outline of an evaluation approach is provided below, however the evaluator(s) is responsible for revising the approach as necessary. Any changes should be in-line with international criteria and professional norms and standards (as adopted by the UN Evaluation Group). They must be also cleared by UNDP before being applied by the evaluation team.

The evaluation must provide evidence-based information that is credible, reliable and useful. It must be easily understood by project partners and applicable to the remaining period of project duration.

⁶ Please see guidelines at Annex 3 of these TORs for reporting of co-financing

The evaluation should provide as much gender disaggregated data as possible.

The methodology to be used by the evaluation team should be presented in the report in detail.

It shall include information on:

- Documentation review (desk study) - the list of documentation to be reviewed is included in the Annex A to the Terms of Reference);
- Interviews will be held with the following organizations and individuals at minimum: UNDP – Ukraine, UNDP/GEF RTA, Rivne municipality, ESCO-Rivne managements/staff, project team, other stakeholders.
- Field visits;
- Questionnaires;
- Participatory techniques and other approaches for the gathering and analysis of data.

IMPLEMENTATION ARRANGEMENTS FOR THE TERMINAL EVALUATION

The principal responsibility for managing this evaluation lies with UNDP Country Office in Ukraine.

UNDP Ukraine will contract the evaluator(s) and ensure the timely provision of per diems and travel arrangements within the country.

The evaluator(s) shall report to UNDP Resident Representative.

The Project implementation unit will be responsible for liaising with the evaluation team to set up stakeholder interviews, arrange field visits, coordinate with the Executing Agency and other arrangements.

The evaluation mission will be supported by the Project team and UNDP Senior Programme Manager responsible for the Environment area.

The mission will coordinate its work closely with the Government of Ukraine and UNDP. The mission will take responsibility for its own schedule (though support will be provided by the Project team).

The terminal evaluation will take place in May-June 2010 and will consist of 3 steps:

Step I – Initiation (about 3 days):

- Desk review of basic documents,
- Development of the assessment methodology;
- Preparation of detailed workplan.

Step II – Field mission to Ukraine (about 10 days):

- Information Collection and Analysis to ascertain project accomplishments,
- Interview with key stakeholders,
- Review the documents and reports produced by the project, government, private sectors, academia, donors, development organizations and UNDP ;
- Site visits to project demo sites, other UNDP programme and projects sites, local administrations, local authorities, successful enterprises or entrepreneurs and other local institutions.
- Debriefing on major findings and conclusions with the Management of Project Implementing and Executing Agencies.

Step III – Preparation of the Report (10-12 days):

- Preparation of the draft report,
- Draft report circulation,
- Discussion on the first draft with UNDP, Government and all stakeholders,
- Finalization of the Report.

The total duration of the assignment will be 25 working days.

The proposed dates for the in-country mission to Ukraine are suggested starting from 17/05/2010. The assignment is to commence no later than 11/05/2010.

These Terms of Reference follows the UNDP-GEF policies and procedures, and together with the final agenda will be agreed upon by the UNDP-GEF Regional Coordinating Unit, UNDP Country Office in Ukraine and Rivne municipality (Project Executing Agency). These three parties will receive a draft of the terminal evaluation report and provide comments on it prior to its completion.

Timeframe for submission of the first draft report: 5 weeks upon signing the contract.

The final version of the terminal evaluation report should be submitted in electronic format (MS Word) to UNDP Country
Final Report Rev 2.00/July31/Project Final Evaluation

Office in Ukraine no later than 30 June, 2010. The hard copy should be posted as well.