THE WORLD BANK/IFC/M.I.G.A.

OFFICE MEMORANDUM

DATE: September 7, 2000

TO: Mr. Ken King, Assistant CEO, GEF Secretariat
Att: GEF PROGRAM COORDINATION

FROM: Lars Vidaeus, GEF Executive Coordinator 

TENSION: 3-4188

SUBJECT: **Romania: Energy Efficiency Project (P068062)**
Submission for Work Program Inclusion

Please find enclosed the electronic attachment of the above mentioned project brief for work program inclusion. We would appreciate receiving any comments by September 21, 2000.

The proposal is consistent with the *Criteria for Review of GEF Projects* as presented in the following sections of the project brief:

- Country Driveness: The project's relationship to the FCC National Communications is described in more detail in Section A.4. Country commitment and ownership and potential for private sector involvement is discussed in section D.4.
- Endorsement: The endorsement letter by the Romanian GEF operational focal point is provided in Annex 6.
- Program Designation & Conformity: Section B.2 describes how the project design meets Operational Program 5, and sections B.4.1.describes barriers targeted for removal by this project.
- Project Design: Sections B.4 describes the sector issues and strategic choices made in selecting the project design; section C.1 provides a summary of overall project design and components; and Annex 1 provides the project's logical framework.
- Sustainability: Section F.1 of the document discusses aspects of the project design as it relates to sustainability.
- Replicability: Sections B.4.2 describes the targeted replication potential within the region and in particular which countries would be most likely to benefit from this model (Bulgaria, Ukraine, Slovakia, Russia). Section C.1 describes technical assistance for dissemination of project results and best practices to encourage replication within the region.
- Stakeholder Involvement: Section D.4 summarizes public consultations and participation from stakeholders; while Section E.7 provides a more in depth description of the project's participatory approach to involve the private sector and other stakeholders during both project development and implementation.

- Monitoring & Evaluation: Sections C.1, C.4, and Annex 2 (page 5) describe the T.A.component to be administered by the Foundation which would support monitoring and evaluation; Section D.3 describes how lessons learned about the importance of M&E have been incorporated into the project design.
- Financing Plan: The project costs, budgets, and financing plan are described in Section C.1. and table 1 of this section.
- Cost-effectiveness: Section D1 describes the limited options available for achieving market transformation given experience to date and Annex 2 details transaction costs of the project design in more depth.
- Core Commitments and Linkages: Sections B.1 describes the linkages of the project within the Bank and the CAS for Romania and EU accession agenda and G.4 describes linkages within the Bank and particularly collaboration across sectors.
- Consultation, Coordination and Collaboration between IAs: Section B.4.2 describes how the project design is linked with a UNDP capacity building project for GHG abatement.
- Response to Reviews: Further elaboration on the estimation of GHG abatement impact is provided in Annex 2 (incremental cost analysis); and an exit strategy for contingent GEF funds relating to the profitability of the Foundation is described in Section C4. The STAP review and the response to the review are in Annex 3; no comments were received from other IAs thus far**.**

Please let me know if you require any additional information to complete your review prior to inclusion in the work program. Many thanks.

Distribution:

Messrs.: R. Asenjo, UNDP
A. Djoghlaf, UNEP (Nairobi)
K. Elliott, UNEP (Washington, DC)
M. Gadgil, STAP
M. Griffith, STAP (Nairobi)
C. Parker/M. Perdomo, FCCC Secretariat

cc: Messrs./Mmes. Atur, Busz, Hossein, Schreiber, Meyer (ECSEG); Shepardson (ECSSD); Sharma, Khanna, Aryal (ENV); ENVGC ISC; ECSEG Unit Files; ECSSD Imaging

PROJECT BRIEF

1. IDENTIFIERS:

PROJECT NUMBER	P068062
PROJECT NAME	**Romania: Energy Efficiency Project**
DURATION	8 Years
IMPLEMENTING AGENCY	The World Bank
EXECUTING AGENCY	ROMANIA Foundation for Energy Efficiency
REQUESTING COUNTRY	Romania
ELIGIBILITY	Romania ratified UNFCCC on 8 June 1994
GEF FOCAL AREA	Climate Change
GEF PROGRAMMING FRAMEWORK	Operational Program #5: Removal of Barriers to Energy Efficiency and Energy Conservation

2. SUMMARY:

The objective of the proposed GEF project is to reduce greenhouse gas emissions in Romania through the development of a self-sustaining, market-based mechanism that will support the development and implementation of commercially viable energy efficiency investments. Specifically, the project will create a self-sustaining, market-based energy efficiency project development and financing facility ("EEFF") that will reduce the perceived high risk and high transaction costs of initial investments. A GEF contingent grant of US$ 9 million will supply the seed capital for the EEFF which will be supplemented by commercial co-financing; a GEF technical assistance grant of US$ 1 million will provide support for capacity building and project development.

3. COST AND FINANCING (MILLION US$)

GEF:	Investment Financing Facility	9.00
	TA Grant	1.00
	Sub-total	**10.00**
CO-FINANCING:	Private and Public Investors	40.00

TOTAL PROJECT COST:50.00

4. ASSOCIATED FINANCING (MILLION US$):

5. OPERATIONAL FOCAL POINT ENDORSEMENT:

Name: Mihai Cozariuc **Title:** General Director
Organization: Ministry of Water, Forests, and Environmental Protection
Date of Endorsement: 14 September, 1999

6. IMPLEMENTING AGENCY CONTACT:

Karin Shepardson, Regional GEF Coordinator, Europe and Central Asia Region
E-Mail: kshepardson@worldbank.org
Tel: (202) 473 8954 Fax: (202) 614 0696

ROMANIA

Energy Efficiency Project

PROJECT CONCEPT DOCUMENT

Europe and Central Asia Region
Energy Sector Unit

Date: September 7, 2000	**Team Leader:** Varadarajan Atur
Country Manager/Director: Andrew N. Vorkink	**Sector Manager/Director:** Henk Busz/Hossein Razavi
Project ID: P068062	**Sector:** PY – Other Power & Energy Conversion
Lending Instrument:	VY – Other Environment
	Poverty Targeted Intervention: N
GEF Supplement ID: P068062	**Team Leader:** Varadarajan Atur
	Sector Manager/Director: Henk Busz/Hossein Razavi
Instrument: GEF contingent grant	**Sector:** PY – Other Power & Energy Conversion
	VY – Other Environment

Project Financing Data
[ ] **Loan** [ ] **Credit** [ ] **Guarantee** [**X**] **Grant** [**X**] **Other** GEF contingent grant

For Loans/Credits/Others:
Total Project Cost (US$m): 50
Total Financing (US$m): 50

Cofinancing: Yes

Financing Plan: [ ] To be defined

Source	Local	Foreign	Total
Public and Private Sector			40
GEF Contingent Grant and TA	0	10	10
Total			**50**

Recipient: Public and private sponsors of energy efficiency projects
Guarantor: NA
Responsible Agency(ies): Romania Foundation for Energy Efficiency

Project implementation period: 2001-2008

A: PROJECT DEVELOPMENT OBJECTIVE AND KEY INDICATORS

A.1. PROJECT OBJECTIVES

The objective of the proposed GEF project is to foster a large increase in energy efficiency investments in Romania through the development of a self-sustaining, market-based mechanism. Those investments will reduce green house gas (GHG) emissions from energy use. The project will support the development and implementation of commercially viable energy efficiency investments, which can provide sustainable and increasing reductions in GHG emissions without public subsidy. The project will achieve this by reducing the perceived high risk and high transaction costs of initial investments, and overcoming the current barriers to expanding investment through the creation of a self-sustaining, market-based energy efficiency project development and financing facility ("EEFF").

A.2. Key Performance Indicators (See Annex 1 – Project Design Summary)

Key performance indicators - to be agreed with the Romanian counterparts - would include, for example:

- Gross investment in energy efficiency, energy savings and GHG emission reductions by project year
- Net operating cost of the EEFF, for example, operating cost minus return on investment.
- Level of cofinancing

A.3. GLOBAL OBJECTIVES AND KEY PERFORMANCE INDICATORS (SEE ANNEX 1 – PROJECT DESIGN SUMMARY):

The global environment objective of the project is to expand commercially-funded investments in energy efficiency activities by removing barriers and lowering transaction costs. Performance indicators with respect to this goal include:

- Increase in commercial lending activity for energy efficiency
- Estimated energy savings and reductions in CO2 emissions at the project level.

A.4. CONTEXT WITHIN FCCC NATIONAL COMMUNICATIONS

The proposed project will support the Government in meeting its international obligations and has been endorsed by the GEF focal point (see attached copy of approval letter). Romania ratified the Global Climate Change Convention in June 1994, and has since submitted the First and Second

National Communications Concerning the National Process of Applying the Provisions of the Framework Convention on Climate Change. The GoR target is to stabilize CO_2 emissions after 2000 at the 1989 level. Romania is (together with the Czech Republic) the largest energy consumer and emitter of greenhouse gases (GHG) in Central and Eastern Europe (CEE) after Poland. While Romania had been fairly autonomous in energy supply, it is becoming increasingly dependent on imports (currently about 30%), especially from Russia. Romania's energy intensity and GHG intensity are the highest in CEE and are about three times higher than in UK, France or Germany.[1] While a national policy on climate change has not yet been finalized, reducing local and global emissions by improving energy efficiency is among the highest priorities. According to the "National Study on Climate Change" (p. 186), energy conservation in industry is the most cost-effective CO_2 mitigation strategy, followed by energy conservation in the transport sector, the development of industrial and urban cogeneration, loss reduction in heat supply networks and energy conservation measures in buildings.

A.5. PROJECT PROCESSING

The project is scheduled for Appraisal in March 2001 and GEF CEO Endorsement/World Bank Board Approval in July 2001.

B: STRATEGIC CONTEXT

B.1. SECTOR-RELATED COUNTRY ASSISTANCE STRATEGY (CAS) GOAL SUPPORTED BY THE PROJECT - (SEE ANNEX 1 – PROJECT DESIGN SUMMARY)

Document number: No. 16559RO **Date of latest CAS discussion:** May 9, 1997

The project supports the CAS objectives of (i) promoting economic growth through enterprise sector reform, particularly better utilization of energy resources, and (ii) protecting and sustainably developing environmental resources. The project would contribute to objective (i) by providing seed capital to a market-oriented financial facility that would offer financing for commercially attractive energy efficiency projects which would reduce production costs and improve competitiveness. The host enterprises targeted would be in the private sector which still experiences difficulties to access Romanian financial markets and faces very stiff collateral requirements. The facility will fill a financing gap by originating transactions not currently being pursued by the Romanian financial sector, by combining expertise in energy efficiency analysis, structured finance and credit analysis, and by attracting commercial cofinancing.

The project would address objective (ii) by financing investments that would reduce energy consumption, and thereby contribute to reduction in air pollution and green house gas emissions. The environmental goals addressed by the project are closely linked to the EU accession standards, which are also set as an important development benchmark in the CAS.

B.2. GEF OPERATIONAL STRATEGY/PROGRAM OBJECTIVE ADDRESSED BY THE PROJECT:

The project is consistent with the objectives of GEF Operational Program 5, Removal of Barriers to Energy Efficiency and Energy Conservation. Section 5.7 of OP5 includes support for activities

[1] 1997 data from the International Energy Agency, based on purchasing power parity.

that lead to sustainable "win-win" results that demonstrate local, national, and global benefits through removal of barriers.

B.3. MAIN SECTOR ISSUES AND GOVERNMENT STRATEGY:

The Romanian energy sector is currently undergoing major restructuring and reform which is supported by various World Bank activities (Power Sector Rehabilitation Project, PSAL I and PSAL II). Private sector participation and competition will lead to increased efficiencies on the supply side. On the energy demand side huge inefficiencies exist but they have received much less attention.

Industry is still the most important energy consumer in Romania, accounting for about 60% of energy use. Recent studies have estimated that the potential for economically viable savings in industry (ranging from no-cost to low-cost and to high-cost measures) is very high—perhaps about 50%—providing win-win opportunities for the global environment and energy users. Detailed studies also have shown that there are many energy efficiency investment opportunities yielding high financial rates of return and reasonably short payback periods which could be capitalized on if the incremental risks involved in developing a proper energy efficiency market could be overcome. Opportunities for cost-effective savings of 20-30% of thermal energy use in the residential, commercial and public sector exist as well.

Energy prices in Romania have undergone a major upwards shift, especially since 1997. Gas and electricity tariffs are now pegged to the U.S. dollar, and electricity and gas prices are roughly on par with economic costs for all consumer groups. Subsidization of heat consumption of residential consumers is being phased out. The high energy prices paid by industry and commercial enterprises, coupled with the large energy savings potential, underpin the very substantial potential for financially viable energy efficiency investments (see Annex 5).

However, actual investments in energy efficiency are very scarce despite the large amount of donor funding for energy efficiency activities during the past few years. This is in large part due to the absence of appropriate funding mechanisms, coupled with a lack of expertise in identifying and developing commercially viable projects.

The GoR recognizes that the high energy intensity of the economy is a major impediment to improving the competitiveness of Romanian industry, reducing the negative trade balance, relieving the burden which high heating bills place on the population and local governments, and improving the environment and implementing internationally agreed environmental targets. The GoR has submitted a draft energy efficiency law to Parliament which confirms that efficient use of energy is an integral part of national energy policy, conforming with the Energy Charter Treaty and with principles of sustainable development. The national energy efficiency policy is based on the following principles: reduce barriers to promote energy efficiency, promote financing mechanisms, educate energy consumers in more efficient use of energy, promote cooperation between producers, distributors and users of energy, and promote private sector energy service companies. By endorsing energy efficiency, the GoR seeks to decrease the energy intensity of the Romanian economy, introduce new technologies and new energy sources, and reduce the environmental impact of energy production, transport, distribution and consumption.

B.4. SECTOR ISSUES TO BE ADDRESSED BY THE PROJECT AND STRATEGIC CHOICES

B.4.1. Overcoming Barriers in Energy Efficiency

Despite the large potential for financially viable energy efficiency investments in Romania, very few of those investments are being undertaken. Essentially, the market is not functioning in this area. Although there have been numerous donor-funded technical assistance and technical demonstration projects to improve energy efficiency, these have not achieved results in terms of increasing investments on the ground. The overarching barrier to energy efficiency investment is a lack of commercial credit for these projects: lending institutions consider both the costs and the risks of lending for energy efficiency at this time to be too high. The recent failure of an EBRD project provides instructive experience. It established a credit line for energy efficiency projects with a Romanian bank that failed to disburse due to lack of incentives and interest and inadequate subproject development.

The following barriers are the major causes of the financing gap. The project will address them and is expected to substantially overcome them.

- **The transaction costs of identifying, developing and financing energy efficiency projects are high.** The development of a sound energy efficiency loan portfolio requires a level of specialization that entails high initial costs. To keep risks at a minimum, banks must develop effective combinations of in-house and advisory expertise on the most attractive elements of this market, the technology and technical trends in energy-using equipment and energy efficient technology, and the most secure and profitable types of financial packaging for energy efficiency investments. Development of personal relationships with enterprises and agencies working on project development also is required, and the development of such expertise requires major upfront expenditures. Those costs are entirely at risk if projects do not materialize. For the domestic Romanian banking sector which is faced with enormous needs to restructure non-performing loans, seek new partners, and establish a viable basis for future operations, the establishment of a small and narrowly focused new line of activities is not a priority. The banks are rightly interested primarily in conservative, traditional lending as a means to regain financial health, such as short-term lending for working capital in financially strong enterprises.

- **The perceived risk of financing energy efficiency projects is high.** Energy efficiency projects are a new type of project to be financed, in that the returns of this investment are based upon operating cost savings and not on increased revenue. Not only is the concept of project finance poorly known in Romania; in addition, energy efficiency project finance is even further from traditional lines of business. Although many profitable opportunities actually do exist, there is a common perception outside of the energy efficiency community that the benefits of these projects are only “social and environmental benefits”, and some people are skeptical about financial profitability. An assortment of small donor-subsidized demonstration projects has at times reinforced this perception. Furthermore, energy efficiency investments do entail certain types of financial risks that other loans may not face. Because energy efficiency projects usually involve an assortment of specialized equipment and materials, and significant design and installation costs, loan securitization presents special challenges and risks, as appraised collateral values of assets purchased with loans are often well below loan amounts. In enterprises that are typically short of cash (even if profitable), there may be dangers that savings on energy bills will be diverted to make other payments, rather than loan repayments.

Although these risks can be mitigated and managed, this requires special innovation and expertise (and hence, additional upfront costs).

- **A combination of financial and technical skills is necessary to successfully develop energy efficiency projects; institutional combination of these skills is currently not available in Romania.** Domestic banks are generally unaware of the potential for profitable investments in energy efficiency, lacking information on such opportunities presented in ways which banks can properly consider. While there is a wealth of studies on technical and economic potential for energy efficiency, these are of little use for bank loan officers. A similar lack of being able to combine technical and financial skills can be observed on part of the consumer/enterprise side. In some cases, enterprise staff are unaware of the potential for energy efficiency gains, using different types of technology or equipment. Generally speaking, however, this barrier is not as large in Romania as some other countries: enterprises and supporting units tend to have strong technical staff who are aware of many of the opportunities. The major barrier is the lack of commercial orientation among technical staff, a widespread lack of understanding of financial packaging or management, and isolation from financial institutions. This is a legacy of the command economy. Unless this barrier is overcome, enterprise technical staff will continue to have difficulty convincing their own management of the financial benefits of energy efficiency investments, let alone skeptical bankers. Finally, making sense of balance sheets and cash flow statements is still a challenging task in former command economies, particularly in still unstable macroeconomic situations.

B.4.2. Strategic Choices

Barrier Removal Strategy. To overcome the barriers above and break the longstanding logjam impeding energy efficiency investments in Romania will require at least three basic things:

- A proven track record of commercially profitable energy efficiency projects, achieved without subsidies to end-users. To convince lenders that a number of risks are only perceived and can be managed, and that initial costs of getting into this specialized business are worth incurring or can be partially avoided due to prior experience, they need to see the results of successful projects.

- Institutional development whereby provision of finance and specialized expertise in the technical appraisal and optimal financial packaging of energy efficiency projects are combined in one institution, providing easy access for enterprises seeking financing for such investments.

- Increased flow of information, training and technical assistance to assist enterprises to identify and prepare commercially attractive energy efficiency projects.

This proposed project is designed to address foremost the first two requirements, through the establishment and operation of a specialized Energy Efficiency Project Development and Financing Facility (EEFF), for which GEF would provide the seed capital. Through a technical assistance component, the project will provide the means for project development, training of partners in project development, and generation and dissemination of information to potential financiers and borrowers about the benefits to be achieved with energy efficiency investments.

The project will build upon the UNDP-executed GEF project "Capacity Building for GHG Emission Reduction through Energy Efficiency Improvement in Romania," which centers on providing some of the solutions needed in the third item mentioned above. The main focus of the UNDP project is to address needs to provide increased practical information to all participants, and

to assist enterprises to identify and prepare commercially attractive energy efficiency projects. As a capacity-building project, however, the UNDP project does not address the urgent needs to develop an effective mechanism for providing substantial amounts of financing for energy efficiency investment. As discussed and agreed with UNDP local staff and the UNDP project government counterparts at the Ministry of Industry, the two projects complement each other extremely well as two parts of a package to address the barriers previously discussed. The World Bank/GEF project provides a means for investment follow-up to the UNDP/GEF project, and the UNDP project provides one major means to overcome needs for increased information flow and project identification for the World Bank supported financing facility. The detailed organization of the UNDP project activities and World Bank project preparation will be actively coordinated to ensure that the combined result is as effective as possible; UNDP is represented in the national Working group for the World Bank project (see D.4).

The current situation in Romania provides an excellent case for a GEF contingent finance investment operation (see Annex 2 for an introduction of the contingent finance concept)—there is both a strong need for a GEF catalytic role, and the operation of the financing facility provides exceptionally high leverage for GEF funds. GEF lead participation is critical for the project—without GEF's involvement in capitalizing the financing facility and supporting initial project development, there is no question that neither the financing facility nor the project can proceed in a reasonable time frame, based on the history of the last five years and discussions with various IFIs and donors (including IBRD). Perceived high risks and transaction costs involved in supporting energy efficiency investments within the currently undeveloped market continue to cause lenders to pursue other opportunities and agendas. Without GEF involvement, a baseline scenario would include a certain degree of progress, e.g. on capacity building and some investments financed from enterprise internal funds, but meaningful market-based energy efficiency investment will remain suppressed, as the basic problems which have impeded investment in the past remain unsolved. While some enterprises may attempt to seek domestic financing for energy efficiency projects, especially if there is special donor support, the very high transaction costs posed by a disinterested banking community stifle even the best intentions—after a point the potential benefits of one or two projects are just not worth the extraordinary effort.

With GEF support to establish the financing facility, both the demonstration value of profitable projects and the institutional means to attain them are expected to expand domestic financial institutional involvement in this market, through increasing participation in the financing facility itself and/or parallel efforts. The contingent finance concept also offers exceptional direct GHG reduction value for GEF investment. With successful operation, ultimate costs to the GEF will only include a small technical assistance component (initially estimated at US$ 1 million) and the time value of the GEF funds placed in the financing facility. Costs per ton of avoided carbon emissions achieved may be under US$ 1, according to preliminary estimates (see Annex 2). GEF funds would be returned after successful implementation to the Foundation for use in other priority GHG reduction efforts in Romania.

In its initial phase, the financing facility is expected to concentrate on financing low-risk win-win projects in commercially viable companies in the industrial sector. In later phases, with more experience, the financing facility is expected to expand its portfolio to other sectors such as district heating infrastructure or public buildings where payback times tend to be somewhat higher.

The Romanian experience is expected to be replicable in other countries of the region where a similar potential for energy savings and GHG emission reductions through increased investments in energy efficiency exists and where only scant domestic commercial financing for energy efficiency

is available for similar reasons as in Romania. Examples are Bulgaria, Slovakia, Ukraine, and Russia.

C: PROJECT DESCRIPTION SUMMARY

C.1. PROJECT DESCRIPTION AND COMPONENTS:

GEF financing in the order of US$10 million is sought under Operational Program 5 to support the establishment and operation of an Energy Efficiency Project Development and Financing Facility (EEFF). This financing facility will be operated under the proposed Romania Foundation for Energy Efficiency which is being set up as a private-public partnership. GEF funds will be used to capitalize the EEFF and partially defray initial transaction costs. Although the funding will initially come mostly from public funds, it is important that the Foundation will be independent and separate from any government agency. The Foundation will be overseen by a board consisting of members from both public and private sectors. The Foundation will enter into a performance contract with a professional manager who will manage the EEFF in a commercial manner, in charge of selecting which projects to finance to assure a sound portfolio in terms of sectors, risks and terms. The facility seeks to make a profit, with investment financing to enterprises on commercial terms. GEF resources would revolve, and the EEFF is designed to be self-sustaining.

In the first phase, the financing facility will focus primarily on restructured/privatized industries, which can establish basic creditworthiness. To minimize risks, initial project selection will focus on (a) small projects (averaging about $450,000); (b) projects which are technically simple, and do not involve substantial process change; (c) projects with rapid financial payback (e.g. less than 3 years); and (d) diversity in the project portfolio. Operations in the first 1-3 years would start up slowly, with the full focus on development of a few projects with the best chances of success (success being both achieved energy savings and repayment of the loans). Initial transaction costs are expected to be very high, but well worth the investment over the medium term.

Project financial support may include debt financing, equipment leasing, payment for services, and/or various combinations of these. The facility is designed to be flexible such that the management can offer the financial products which the evolving market demands. The product mix and terms need to be flexible so that the management can react easily to any potential problems, such as changes in macroeconomic circumstances.[2] Active partnerships with commercial financing institutions, leasing companies and potential ESCOs will be strongly encouraged. In addition to financial services, the financing facility would offer its clients expertise in energy efficiency to support them in project development and financial packaging. Technical assistance from the GEF contribution and donor funds will provide additional support for the latter.

[2] It is currently not expected that the facility would offer partial credit guarantees. Analysis during project preparation indicates that transaction costs, high perceived risk of lending for energy efficiency investments and non-availability of packaging skills are the primary barriers which this project is designed to substantially reduce through the creation of a financing facility. A partial credit guarantee would be appropriate if the financial sector would refrain from lending for energy efficiency due to a high default risk. Equity is another important part of the overall menu of financing instruments to further energy efficiency. The project team considers that equity investments provided by the EEFF should follow at a later stage, when sufficient debt investments have taken place to assure revolution of funds. Considering that equity is the highest risk capital, it should be undertaken only if market conditions require it and when exit is feasible.

The initial capital for the financing facility will be provided by GEF. The project is, however, designed to attract a substantial amount of commercial cofinancing. As a flexible financial facility the EEFF would – unlike traditional mutual funds – seek cofinancing on a pooled and on a stand-alone basis, in which case it would charge for its services appropriately, based on market conditions. It is anticipated, however, that in the medium term cofinanciers would prefer to share risks with the GEF. Given the current reluctance of the financial sector to finance energy efficiency investments, GEF support as a catalyst and an evolving commercial track record will be likely prior conditions for large-scale cofinancing commitments. The lack of private capital for energy efficiency investment in Romania is, after all, the reason for designing a GEF project in the first place. During the start-up phase, projects will be developed using some of the GEF TA grant funds and presented to the financing facility management. The financing for those first projects will come primarily from GEF (plus an own share of the borrowers averaging about 20%). The realization of energy savings generated by those investments and successful repayment of the loans will be the most powerful marketing tool for the management of the financing facility in their quest for attracting other financiers to the EEFF. Romanian partners from the financial sector in particular will be targeted, including international commercial banks with energy efficiency finance experience such as Raffeisen and others; other potential partners include the World Bank Group (IFC and IBRD) and other IFIs (such as EBRD), the European Union, bilaterals, and the USAID funded Development Credit Authority.

The project is being developed in the spirit of "contingent finance" as a GEF financing modality (see Annex 2), and might be considered as a pilot project in the World Bank's execution of new contingent finance modalities: Aside from a small component of the project supporting capacity building and above-standard market development costs, GEF resources for investments would be onlent to end-users at commercial rates for regular medium-term investment loans. In essence, the financing facility would buy down current perceived risks and transaction costs to allow lending at regular commercial rates. Over time, the need for this "buy-down" should be reduced, allowing self-sustaining support through the market. If implementation proceeds as planned, GEF investment resources would be retained through the remittances of the loans (or perhaps grow), for allocation to other GHG reduction purposes at the end of the project. Preliminary thoughts discussed with the Romanians on the project exit strategy for the GEF are to withdraw or sell the GEF stake in the financing facility once a series of criteria indicating success have been met, and for the Foundation to use those funds for other priority GHG reduction efforts in Romania. Agreements about those uses would be reached in negotiations between World Bank, GEF, and the GoR and would be specified in the implementation agreement between the World Bank and the Foundation.

GEF resources will be very highly leveraged. Leveraged financing includes, in particular, the growing financial resources provided by the largely private-sector enterprises through their repayments of the enterprise loans. (In essence, for performing loans, enterprises will have paid 100% of the investment costs when the loans are repaid, and the financing facility will have paid no net investment resources.) The size of the financing facility also will be increased through the participation of other financiers. The total amount of cofinancing and enterprise participation is estimated at US$ 40 million. It should be noted, however, that the contingent finance arrangements of this project are expected to bring exceptionally high leverage for GEF funds even if participation of other financiers is small or non-existent at project inception.

PROJECT COMPONENTS

EEFF Capitalization (US$ 9 million). Most of the GEF contribution will be used to provide the initial seed capital for the newly established energy efficiency financing facility (EEFF) which will be managed by a management company under the Romania Foundation for Energy Efficiency. Loans will be made on a commercial basis to creditworthy customers from this financing facility that will revolve with interest and principal payments flowing back into the facility for additional loans. Borrowers will be targeted who have good growth prospects and where the energy savings from the investments would generate positive cash flows which would be partially used to repay the loans.

The operating principles required for the EEFF manager under the Foundation are clear. The EEFF will be professionally managed, its managers and senior staff will work under a performance contract, and will make all business decisions solely in a commercial manner within the criteria established for its operation. The management company may be a newly established company. Financial transactions of the EEFF would start up slowly in the initial years and will most likely not be sufficient to generate a fee income covering the set up costs of the EEFF initially. As experience is gained and additional cofinancing committed, the number of projects can be increased sufficiently to at least equalize annual operating costs and fee income. Some of the initial set-up costs might be recovered. Analysis during project preparation has shown that the project will need to have an implementation period of at least eight years to be able to signal a sustainable operation. With a positive external environment, the most likely outcome would be that almost all the initial seed capital would be returned to the Foundation (see Annex 2).

Table 1: Project Costs (in US$ million)

Component	**Category/ Sector**	**Indicative Costs**		**Financing Plan**				
		Amount	% of Total	GEF financing	Cofinancing, donors	Cofinancing, commercial sources	Private contribu-tion*	Total
EEFF Capitalization	Investment	48	96	9	0	16	23	48
Technical Assistance	Institutional Development	2	4	1	1	0	0	2
Total Costs		50	100	10	1	16	23	50

Note: * The EEFF will contribute a maximum of 80% of the cost of each individual project. Borrowers need to finance the rest from other sources.

The actual investment implemented under the project is a multiple of the project cost shown in Table 1. The financing facility is a revolving fund, and the interest payments and principal repayments will be used for new loans. It is estimated that investment of more than US$ 113 million will be financed during the project life of 8 years (see Table 2). This amount will have been triggered by GEF seed capital of US$ 9 million and other funds, totaling US$ 50 million, including about US$ 23 million own financing by the borrowers.

Table 2: Project Investments (in US$ million)

	Total Project Investment	Financing Plan				
		Net GEF financing	Cofinancing, commercial sources	Private contribution	Revolving EEFF funds	Total
Investment	113	0.1*	16	23	74	113

Note: * Assumes that US$ 8.9 million of the initial GEF grant are returned to the Foundation at the end of the project, to be used for other GHG reduction projects.

Technical assistance (US$ 1 million). The funds of the technical assistance (TA) component would be used for capacity building and project development which go beyond what a financier would be willing to expend under typical commercial considerations. They would also cover the cost of monitoring and evaluation, carried out by the Foundation. The TA work required would fall under the following categories:

- Training and capacity building for staff and partners directly involved in lending operations or project development, including the development of an operational manual for the development and packaging of small projects;
- general and targeted outreach to potential clients, market development and education of potential clients;
- support for initial feasibility studies, particularly the bankability of projects, and for environmental screening of proposed projects, where required;
- monitoring of project implementation and verification of energy savings and CO2 emissions, including reporting to GEF (it is proposed that only for the first projects a verification of the actual savings take place, but that for the rest of the projects a short form is developed); and
- dissemination of project results and best practices on the basis of monitoring and verification activities, including regional fora to encourage replication of the financing mechanism.

The Foundation will be in charge of implementing the TA component which covers the non-commercial aspects of the project. Bilateral donors have signaled their interest in contributing to the financing of some of the Foundation activities. The project team will contact them during further project preparation. The total cost of the technical assistance is estimated to be US$ 2 million. Additional cofinancing of at least US$ 1 million is being sought for Foundation activities, such that the GEF-financed portion of the total TA costs would be 50%, i.e., US$ 1 million.

C.2. KEY POLICY AND INSTITUTIONAL REFORMS TO BE SOUGHT:

None; the project is expected to be implemented successfully within the current Romanian environment. The project would support the implementation of the proposed energy efficiency legislation.

C.3. BENEFITS AND TARGET POPULATION:

The project benefits include energy savings and related savings in energy bills and improvements in air quality. The project beneficiaries are foremost the clients of the financing facility who implement investment measures to reduce energy consumption. In the first phase of the project, these will be companies in the industrial and commercial sectors, ESCO companies who serve them and suppliers of equipment through increased sales. For industrial sector clients of the EEFF, the project also would facilitate greater productivity and improve competitiveness. In the second phase of the project it is expected that the building and public sectors will be ready to apply for commercial credit and finance projects that would benefit also the general population by reducing the cost of basic infrastructure services and improving comfort. Managers and staff of the EEFF as well as co-financiers would participate in the successful operation of the EEFF through higher earnings.

C.4. INSTITUTIONAL AND IMPLEMENTATION ARRANGEMENTS:

Implementation Arrangements. The project beneficiary will be a newly founded entity, the Romania Foundation for Energy Efficiency. The Foundation will be a non-profit organization that will have a broad global climate change mission. It will be the official recipient of the GEF grant through the Ministry of Finance on the basis of an implementation agreement with the Bank. The Foundation will carry out non-commercial aspects of the project, such as organizing monitoring and evaluation of project results and dissemination. The GEF TA grant components will be used for these tasks and will be administered by the Foundation. The Foundation will also be in charge of attracting additional donor cofinancing to the project. The Foundation needs to become functional within the next few months of project preparation, to undertake the competitive procurement of the EEFF management which should be in place before effectiveness of the project. The exact composition of Foundation members from the public and the private and NGO sector will be discussed with stakeholders during the next few months and the Foundation charter will be drawn up. It is expected that the Foundation will be registered in Fall 2000, prior to project appraisal.

The larger part of GEF resources will be used as a contingent grant for seed capital of the financing facility for lending and other financial operations to borrowers. The Foundation will not be in charge of the commercial aspects of the project. These will be left to a professional management company that will select projects and disburse funds according to the criteria set out in the management performance contract with the Foundation. It is crucial that the entity in charge of the project portfolio make all decisions in a strictly commercial manner to demonstrate that energy efficiency is a bankable business and to maximize profits. The management company will also need to generate tangible interest in the financial community to participate in the facility with cofinancing. It is unlikely that commercial entities would entrust their funds to an entity that is not clearly independent from the Foundation and operates within clearly defined commercial rules. The EEFF management will have a small staff; it will need to outsource a number of technical and banking services to advisors and consultants to minimize overhead costs. The precise nature of the EEFF management arrangements under the Foundation is still under discussion with Romanian Government officials and needs to be firmed up during final project preparation.

Finally, the exit strategy foresees that GEF funds (minus any contingent grant and the TA component) will be pulled out of the financing facility at a time when the success of

commercial energy efficiency financing has been demonstrated. The most important milestone which would define this success is the profitability of the EEFF, i.e., all operating costs are covered by return on investments plus sound a margin. This presumes that cofinancing has been attracted, and that the number of projects and total amount of investment has reached a relatively high level. The GEF funds returned to the Foundation will then be used for other GHG mitigation projects in Romania that are in line with the GEF global objectives, as described in the implementation agreement. However, there is a non-negligible chance that the financing facility will not be successful. This will be indicated by the fact that operating costs area not covered by the return from investments. If this indicator falls below a certain benchmark, the project would be cancelled. The implementation agreement between World Bank and Foundation and the management contract between Foundation and EEFF management would contain clauses to this effect.

Fiduciary Aspects - Financial Management and Procurement Capacity Assessments

The Foundation will assume PIU responsibilities. It will produce supervision reports and will be responsible for audits and monitoring reports.

Procurement Arrangements. Procurement will be carried out according to commercial procedures, as for other projects involving financial intermediaries. The procurement capacity assessment will be carried out during project preparation, once the Foundation has been set up. The main procurement issue is the competitive selection of the EEFF manager.

Financial Management Aspects. Detailed procedures for financial management by the Foundation and EEFF management will be developed once the institutional arrangements for the project are finalized with government authorities.

Progress to Date in Project Preparation. The objectives and basic structure of the project have been defined and agreed upon with the GoR. A draft business plan for a management company under the Foundation has been developed. The management structure for the EEFF under the Foundation still needs to be investigated. An assessment of the Romanian market for EE investment confirms that the market for financing attractive energy efficiency investments is several times larger than what the EEFF would be able to finance at competitive rates.

Progress To Date in Public Information. Since the very beginning of project identification, the project preparation team has had intensive and extensive discussions with stakeholders in the financial sector, the industrial sector and the government about the experience with energy efficiency activities, availability of and interest in financing, etc. A Working Group has been established, consisting of public and private sector and NGO members. It serves as a representative of Romanian society and counterpart for the project preparation team. They have agreed with the project concept. During the next few months, the project preparation team will start an information campaign and extensive discussions with bilaterals about additional financing of TA to be channeled through the Foundation, with entities which might be interested in bidding for the management company or participating in commercial cofinancing, and with entities which could serve as partners in project development, such as industrial and private sector associations, manufacturers, suppliers, ESCOs, research institutes, etc.

Need for Additional Preparation Activities for PDF-B Funding. Preparation under PDF-B funding will continue with the following activities:

- detailed investigation of the role, functions, charter and set-up of the Foundation and its relationship with the EEFF management, including the performance contract;

- estimation of the operational budget of the Foundation and of the EEFF, including fee structure and level for the EEFF manager;
- identification of entities interested in EEFF management and preparation of tendering of the EEFF management;
- continuation of market analysis and documentation of an anticipated deal flow;
- risk analysis and mitigation plans;
- financial management and procurement capacity building; and
- more detailed determination of the monitoring and evaluation and dissemination activities and other TA activities and their costs;
- establishment of appropriate monitoring criteria, procedures and benchmarks for the financial results of the EEFF and the energy savings resulting from investments;
- consensus building and public information campaign to ensure stakeholder involvement.

D: PROJECT RATIONALE

D.1. PROJECT ALTERNATIVES CONSIDERED AND REASONS FOR REJECTION:

For the energy efficiency financing component, several alternatives were considered and rejected:

- Energy efficiency fund administered by ARCE, the Romanian Agency for Energy Conservation in the Ministry of Industry and Commerce. This was once proposed in one of the first drafts of the energy efficiency law. However, while ARCE has extensive experience in technical evaluation of energy efficiency projects and has good connections to energy consumers through its regional offices, it has very little experience in financial evaluation of projects and potential borrowers and in financial engineering. ARCE has no commercial expertise.
- Energy Efficiency credit line administered by a commercial bank. This was chosen by EBRD for its Energy Conservation Financing Scheme. However, the Romanian bank had little interest in the project, or incentives to develop this specialized business. Consequently, no loans were made, resulting finally in project cancellation.
- Guarantee fund available for financial intermediaries. In Hungary, the IFC/GEF-backed project which uses a partial credit guarantee seems to have catalyzed commercial financing for energy efficiency through ESCOs. In Poland, a similar mechanism is proposed for an IBRD/GEF ESCO project in the building sector. This instrument is most suitable if the banking sector is already engaging in medium-term lending for investment purposes. In Romania, the banking sector is still being restructured and does not seem to be ready for this kind of credit enhancement operation.
- Support solely for ESCO activities. In several Eastern European countries, energy service companies (ESCOs) have become active, frequently with financing from multilateral agencies, and some of them seem to be quite successful. In Romania, the ESCO concept is still largely unproven; two ESCOs are currently struggling with no or very limited access to financing, and a newly formed third has just received funding from the EBRD. Nevertheless, the proposed financing facility will support, work with and provide financing for any ESCOs which are able to develop and implement viable projects, as one promising vehicle for channeling investment financing.

- Direct funding of major EE investments. While some demonstration effect could be expected from extending loans to some Romanian enterprises for well-defined investments in energy efficiency, it would probably not lead to an uptake of market-based energy efficiency lending by the financial sector in Romania. One reason is that companies to be targeted with energy efficiency loans would need to have very sizeable energy consumption and saving potential. These companies exist in Romania, but most of them are still state-owned and need to be restructured and privatized.

Given the above experiences and observations, plus the lack of existing commercial loan activities for energy efficiency projects in Romania, the project preparation team proposed to set up a special, independent facility which would have both financing funds at its direct disposal and direct access to financial and technical energy efficiency expertise.

D.2. MAJOR RELATED PROJECTS FINANCED BY THE BANK AND/OR OTHER DEVELOPMENT AGENCIES (COMPLETED, ONGOING AND PLANNED).

Sector Issue	**Project**	**Latest Supervision (PSR) Ratings (Bank-financed projects only)**	
Bank-financed		**Implementation Progress (IP)**	**Development Objective (DO)**
Improved power supply efficiency and structural reform in the power sector reform	Power Sector Rehabilitation	S	S
Structural reforms in the utility and financial sector	PSAL I	S	S
Structural reforms in the financial sector, privatization of state-owned enterprises	PSAL II (under preparation)	NA	NA
Other development agencies:			
Improved efficiency of district heating systems	**EBRD** District Heating Rehabilitation Scheme	NA	NA
Improved efficiency of energy services for the public and municipal sectors	ESCO Financing Scheme	NA	NA
TA for capacity building for energy efficiency improvement	**UNDP/GEF** Capacity Building for GHG Emission Reduction through Energy Efficiency Improvement in Romania	NA	NA
TA for project preparation to improve efficiency of public buildings and district heating systems (to be financed by EBRD)	**USAID/SECI** Energy Efficiency Demonstration in Constanza	NA	NA

IP/DO Ratings: HS (Highly Satisfactory), S (Satisfactory), U (Unsatisfactory), HU (Highly Unsatisfactory)

D.3. LESSONS LEARNED AND REFLECTED IN PROPOSED PROJECT DESIGN:

Project design has drawn extensively on the – mostly negative – experience with energy efficiency activities in Romania (see D.1), on worldwide experience with energy efficiency funds that was gathered mostly at an ESMAP-sponsored international workshop on energy efficiency funds (see

http: //www.worldbank.org/html/fpd/esmap/ee_operational_exchange.html), and on other international experience with financing of energy efficiency and environmental investments.

In the case of the EBRD credit line some essential requirements for a successful operation were not fulfilled: The entity in charge of financing energy efficiency projects needs to be experienced in the technical and financing aspects of energy efficiency. In particular, it needs to have access to project development funds or to a group of advisors with whom it can establish alliances in order to identify and develop good projects. The agency also needs to have a financial stake in the successful performance of the financing facility. All of these elements are part of the design of the proposed project.

Among the most important lessons learned from Energy Efficiency Fund experience worldwide -- which is confirmed to a large extent by lessons of experience with Environmental Funds -- are the following:

1. Maximize the transparency of procedures; minimize government interference in financing decisions. Establish and operate the Fund as a business, not a technology deployment system; profit-making should be an objective of the Fund.

2. Use existing market players (i.e., banks) for functions (e.g., collections) where possible. In any case, make sure that financial and technical-economic appraisals are of high quality. Due diligence must be performed by professional staff with incentives for good performance.

3. The financing institution needs to be very proactive in the development of a project pipeline. Marketing, particularly to senior management, is a critical step in the success of a Fund. Use third parties such as ESCOs or industrial associations to market and develop projects for the Fund, thus avoiding high transaction costs.

4. Focus on short term loans for projects with high rates of return. Avoid placing funds in a few large loans; spread the risk through many projects. Fund financing should cover only a portion of the project costs; the borrower should have equity in the project. Lend only to credit-worthy clients; establish high credit-worthiness criteria, which are rigorously enforced. Full collection of interest and principal repayment is an overriding concern.

5. Small projects have high transaction costs. They need to be packaged by partners such as ESCOs, or very simple mechanisms have to be designed which avoid costly audits and feasibility studies, such as a list of standard energy efficiency measures.

6. Monitor thoroughly to ensure the funds where spent on the project, the project was implemented properly and operated as designed; monitoring provides an early warning for any problems.

7. Some experts believe that Energy Efficiency Funds require lower than market interest rates to attract clients and/or some other enhancements for potential customers, such as project development support.

Lessons 1-6 are reflected in the design of this project. The project preparation team however believes that subsidized interest rates are not conducive to the creation of a sustainable market for energy efficiency financing. The intent is to price the financial products on terms that are generally consistent with the nascent corporate finance market in Romania. The proposed facility will however set itself apart by offering to its potential clients its combined expertise in energy efficiency, structured finance and credit analysis, as well as project development support.

Furthermore, it is expected that the facility will not engage in over-collateralization as most Romanian banks do, but rather structure its financial products in such a way that the cost savings from the energy efficiency investments will result in positive cash flows following loan payments.

D.4. INDICATIONS OF COUNTRY COMMITMENT AND OWNERSHIP:

The Government of Romania has acknowledged that improving the efficiency of energy use and, hence, reducing the country's energy intensity, and protecting the environment are critical priorities for attaining sustainable development. The cabinet of ministers requested the World Bank in a letter of October 21, 1999, approved by the Prime Minister, to support the preparation of a GEF-funded energy efficiency project. The GEF Focal Point in the Ministry of Environment requested PDF B grant and execution of the grant by the World Bank. As a result of this high-level endorsement, a Working Group was established with participants from the key public agencies involved and from the private sector. It is chaired by the President's Counselor. The Working group meets regularly to support national consensus building, review project preparation progress, provide comments and guidance on specific TORs for the consultants, review their recommendations, and ensure finalization of outputs acceptable to the Working Group and the Bank.

There is widespread interest among the public and private sector for energy efficiency investments. During identification and preparation activities there has been wide consultation and high level participation from diverse stakeholders, including government, the private sector, banks, civil society, whose support and commitment are central to the outcome of this project. This broad-based participation and public involvement will be further strengthened during project preparation.

D.5. VALUE ADDED OF BANK AND GLOBAL SUPPORT IN THIS PROJECT:

The involvement of the Bank and GEF in the project is regarded as essential in overcoming the gridlock in energy efficiency financing in the country. Energy efficiency efforts are at an impasse, and frustration is high among Romanian stakeholders. The lack of an integrated, coherent government policy and leadership has resulted in marginalization of energy efficiency proponents as opposed to productive team effort. Donor financing has generated many studies, but funding for investment has not been forthcoming.

The Bank's stature in Romania, and its expertise in financing innovative energy efficiency projects worldwide is considered as essential to make a difference and get things going in Romania. The current situation in Romania provides an excellent case for a GEF contingent financing investment operation—there is both a strong need for a GEF catalytic role, and the operation of the financing facility provides exceptionally high leverage for GEF funds. GEF lead participation is critical for the project—without GEF's involvement in capitalizing the EEFF and supporting initial project development, there is no question that neither the EEFF nor the project can proceed in a reasonable time frame, based on the history of the last five years and discussions with various IFIs and donors (including IBRD). Perceived high risks and transaction costs involved in supporting energy efficiency investments within the currently undeveloped market continue to cause lenders to pursue other opportunities and agendas. With GEF support to establish the EEFF, both the demonstration value of profitable projects and the institutional means to attain them are expected to expand

domestic financial institutional involvement in this market, through increasing participation in the EEFF itself and/or parallel efforts.

E: ISSUES REQUIRING SPECIAL ATTENTION

E.1. ECONOMIC

Economic evaluation methodology:

[x] Cost benefit [ ] Cost effectiveness [x] Incremental Cost [ ] Other [specify]

The analysis of the incremental costs and the global environmental benefits are outlined in Annex 2 and preliminary estimates are given there.

E.2. FINANCIAL

Financial analysis will be developed for the financing facility (EEFF) and financial performance indicators will be agreed upon. A model business plan has been developed for the EEFF which would be managed by a professional management company.

E.3. TECHNICAL

Only proven energy saving technologies will be eligible for financing. This will reduce the risk of technical non-performance. Since some of these technologies are new to many applications in Romania, their installation and operation will still need the development of special skills in the engineering trade in Romania. Except for projects carried out under performance contracts, the risks that the technologies will perform and deliver the savings expected will lie with the end user.

The potential market for commercially viable energy efficiency financing has been conservatively estimated at about US$ 210 million. Due to the current economic situation, it is expected that for the first years of EEFF operation, only projects in creditworthy industrial facilities will be financed, though the overall market for viable projects should grow dramatically over the life of the project, including also the building sector and municipal services.

Annex 5 to this document summarizes the estimated market potential for energy efficiency investment in Romania, with particular emphasis on the industrial sectors that have both good economic/ technical potential, and prospects to have creditworthy customers. The market assessment has identified the conservative overall potential in these sectors, and also a subset that may serve as initial year pipeline projects. Any project pipeline can only be indicative, as all final investment decisions will be up to the management of the financing facility.

E.4. INSTITUTIONAL

Role of the Foundation. The role, functions, charter and set-up of the Foundation and its relationship with the management of the financing facility will be investigated in more detail during further project preparation. This work is crucial since the Foundation needs to become functional soon in order to engage in tendering for the management of the EEFF. The Foundation will have the role of project implementation unit, but will also be responsible for attracting donor co-financing to the project, and for implementing the non-commercial aspects of the project. In

addition, the broader mission of the Foundation which is envisioned to be GHG reduction rather than just energy efficiency, needs to be defined in more detail. Stakeholders, particularly from the environmental community, will be closely involved in further preparation and the project preparation team will engage them in intensive discussions.

Identifying partners for project development. The financing facility needs to link closely with existing entities in Romania that can participate actively in project development. Manufacturers, suppliers and dealers of energy efficiency equipment, various industry associations, ESCOs, engineering firms, and business advisory centers have connections with industries, and their own particular interests which could be harnessed to identify projects for the facility and support potential clients in the preparation of projects. A "finders fee" of 1% of project loan has been included in the financial model to reflect the cost of developing the pipeline, which is estimated to be sufficient compensation to potential partners. Many of the potential partners require training in order to provide effective project pipeline development services.

Establishment of the EEFF. The engagement of the EEFF management requires that terms of reference and a performance contract are drawn up, and tendering arrangements are put in place.

E.5. SOCIAL

No social hardships are anticipated as a result of the project. The project will initially concentrate on lending to private sector companies in potentially competitive subsectors of industry which has a history of very high energy intensity. By investing in energy saving measures, those companies will be able to reduce their operating costs and increase their product quality. Improved competitiveness on internal and external markets should be the result, leading to higher industrial growth rates. The population will benefit through increase in employment.

In a second phase, the portfolio of the financing facility will include projects in the municipal and building sector. The project would make basic infrastructure services more affordable and improve the comfort of the general population.

E.6. ENVIRONMENTAL

a. Environmental Issues: No adverse major environmental issues are associated with this project which is specifically designed to generate energy savings. Investments will reduce fuel consumption and/or encourage the use of less polluting fuels which in turn will improve air quality. The facility will not invest in those projects where process changes may negatively impact the environment.

Replacement of materials and equipment may lead to dust and noise emissions. Replacement of old insulation material may involve asbestos removal, and assurances must be provided that any new insulation materials are acceptable under Romania's commitments to the Montreal Protocol.

b. Environmental Category: FI (Financial Intermediaries)

c. Justification/Rationale for category rating: All project components should, during operation, provide for substantial reductions in the use of fossil fuels in general and/or replacement of polluting fuels with cleaner fuels. There may be some minor adverse effects during construction/ replacement activities.

d. Status of Category A assessment: N/A

e. Proposed Actions: During further project preparation, the project team will carry out an evaluation regarding the adequacy of current Romanian environmental laws and institutions to

address potential environmental issues associated with subprojects to be supported under the project. The Operational Manual to be prepared for the financing facility will include an environmental section describing the EA procedures for the project and the institutional mechanisms for the environmental screening and approval. The draft manual will be submitted to the Ministry of Environment and the World Bank for approval as a condition of Negotiations. Subprojects will meet all Romanian environmental requirements, approvals, and procedures, and shall be consistent with the World Bank environmental policies and procedures, as well as the guidelines of the Bank's Pollution Prevention and Abatement Handbook.

f. Status of any other environmental studies: N/A

g. Local groups and NGOs consulted: See E7.

h. Resettlement: N/A

i. Borrower permission to release EA: N/A

j. Other remarks: None

E.7. PARTICIPATORY APPROACH

a. Primary beneficiaries and other affected groups:

There is a widespread interest within public and private sectors to identifying and implementing sustainable mechanisms to finance energy efficiency investments. During identification and preparation activities there has been wide consultation and high level participation from those stakeholders, whose support and commitment are central to the outcome of this project:

- Companies in the industrial sector who would be the potential clients for the facility, and their associations;
- Manufacturers, contractors and other service providers, for example, ESCOs, research institutes and engineering and consulting companies, but also associations, catering to the industrial and other sectors, who would be targeted as partners and allies of the EEFF;
- Companies in the financial sector, particularly banks, but also leasing companies, who would be targeted as cofinanciers and potential partners of the EEFF; and
- Actors in the environmental sector who would be allies for the foundation, particularly those interested in global environmental issues.

High-level management and energy managers of companies in the industrial sector which has been identified as the primary target for financing energy efficiency investments have been engaged during the market assessment. However, this has been on a rather general level with the purpose of informing project design, rather than developing a project pipeline. This will be the responsibility of the future management of the financing facility which will be in charge of making all commercial decisions. The other main target of outreach activities are the partners with which the financing facility might cooperate during project identification and preparation. Among those potential partners are associations of industrial and small and medium enterprises, manufacturers and suppliers of energy efficiency appliances, sectoral research institutes, energy service companies, and others. This broad-based participation and public involvement will be further strengthened during project preparation.

Planned activities: During further project preparation, contacts with stakeholders will be intensified, particularly with potential cofinanciers in the financial sector. Another group which will be engaged is the environmental community. The advice of their members on the setup and role of the Foundation will be sought.

b. Other key stakeholders:

See a. above

E.8. CHECKLIST OF BANK POLICIES

a. Safeguard Policies (check applicable items):

Policy	Risk of Non-Compliance[1]
Environmental assessment **(OP 4.01)**	L
Natural habitats **(OP 4.04)**	
Forestry **(OP 4.36)**	
Pest management **(OP 4.09)**	
Cultural property **(OPN 11.03)**	
Indigenous people **(OD 4.20)**	
Involuntary resettlement **(OD 4.30)**	
Safety of dams **(OP 4.37)**	
Projects in international waters **(OP 7.50)**	
Projects in disputed areas **(OP 7.60)**	

1 H is High, M is Medium, L is Low

b. Business Policies (check applicable items):
[ ] Financing of recurrent costs **(OMS 10.02)**
[ ] Cost sharing above country 3-year average **(OP 6.30, BP 6.30, GP 6.30)**
[ ] Retroactive financing above normal limit **(OP 12.10, GP 12.10)**
[X] Financial management **(OP 10.02, BP 10.02)**
[ ] Involvement of NGOs **(GP 14.70)**

c. Describe issue(s) involved not already discussed above: N/A

F: SUSTAINABILITY AND RISKS

F.1. SUSTAINABILITY.

The project promotes the market-based, commercial funding of energy efficiency projects. The development of a sound portfolio of projects which are financially and economically viable and presented by creditworthy borrowers will be ensured by entrusting lending decisions to a professional management which will adhere to a set of preset conditions and whose income will be determined to a large extent by the performance of the facility, i.e., its profitability.

The success of the facility depends on being able to attract commercial cofinancing which will only be the case with a string of early successful deals and with the perception of a commercially

focused operation. The facility will thus foster, through both demonstration effects and explicit partnerships, expanded investments by other market players, such as commercial banks or energy service companies.

The sustainability of energy efficiency financing will be enhanced further by the EEFF engaging a range of partners and allies in commercially focused project development and other project implementation components. These partners will have received training in combining technical and financial skills and will have had opportunities to use them during project implementation. It is expected that they would continue to offer those commercial skills.

The exit strategy foresees that GEF funds (minus any contingent grant and the TA component) will be pulled out of the financing facility at a time when the success of commercial energy efficiency financing has been demonstrated. The most important milestone which would define this success is the profitability of the EEFF, i.e., all operating costs are covered by return on investments plus a sound margin. This presumes that cofinancing has been attracted, and that the number of projects and total amount of investment has reached a relatively high level. The GEF funds returned to the Foundation will then be used for other GHG mitigation projects in Romania that are in line with the GEF global objectives, as described in the implementation agreement.

F.2. CRITICAL RISKS (REFLECTING ASSUMPTIONS IN THE FOURTH COLUMN OF ANNEX 1 "PROJECT DESIGN SUMMARY"):

Risk	Risk Rating	Risk Minimization Measure
Annex 1 - From Outputs to Objective		
Projected energy savings and improved cash flows do not materialize	S	❑ Collaboration with qualified engineering and financial consultants during project development ❑ Comparison of saving predictions against benchmarks during project due diligence
Energy price signals don't encourage end user interest in implementing energy efficiency measures	M	❑ Adapt project design and targeted borrowers to economic situation
Financing facility borrowers do not repay loans	S	❑ Professional facility manager does thorough client credit screening and monitoring ❑ Design and use of innovative collateralization
Market-based skills are not adapted and used by technically trained specialists	M	❑ Choose partners and specialists who have an incentive to develop and use market-based skills
Annex 1 - From Components to Outputs		
Effective facility manager cannot be secured and retained	S	❑ Management recruitment starts well before implementation commences.
EEFF overhead costs surpass critical limit	M	❑ Adequate incentives for cost control in management performance contract ❑ Collaboration with experienced partners
Energy consumers are unwilling to borrow for EE investments	S	❑ Partners in project identification and development are trained and receive finder's fee for projects accepted for financing ❑ Project identification and development and marketing of the facility is pursued vigorously by facility managers and partners
Adequate cofinancing cannot be secured	S	❑ Facility management is clearly commercially oriented and independent of Foundation ❑ EEFF investment successes are disseminated actively among potential cofinanciers ❑ Facility Managers and Foundation pursue commercial and donor financing actively
Failure of early projects does not demonstrate viability	M	❑ Careful selection among creditworthy borrowers and projects with high success rates ❑ Tie remuneration of facility management to successful performance of early projects
Overall Risk Rating	**S**	

Risk Rating - H (High Risk), S (Substantial Risk), M (Modest Risk), N (Negligible or Low Risk)

Risk Analysis and Mitigation.

Commercial financing of energy efficiency projects in Romania is fraught with risks. The proposed project recognizes the existence of those risks and is developing mechanisms to defray them to the extent possible.

The most important general risk mitigation tool is the flexibility of the financing mechanism. The manager of the EEFF needs to be able to change and adapt financial products, targeted clients, partners and allies to changing circumstances for the facility to become profitable. The implementation agreement between World Bank and Foundation and the management contract between Foundation and management company will specify the arrangements under which key features of the operation of the EEFF can be changed. A monitoring process with lead indicators will be put in place to allow for quick management decisions.

Key risks include:

- Macroeconomic conditions discourage energy efficiency investments: The macroeconomic situation is still relatively unsettled in Romania. Recent indicators point to some improvements with industrial activity picking up, particularly in the export sector. It is expected that the situation will continue to improve, particularly after elections later this year. If, however, the economy falls back into a slump, demand for financing of energy efficiency projects would be repressed. In that case, the EEFF manager would need to identify other targets for investment financing which are less vulnerable to general economic performance such as municipal services and buildings. If this strategy also fails, EEFF management would need to reduce overhead costs and gear towards a smaller operation.
- Adequate commercial cofinancing of the EEFF is not forthcoming: The EEFF is designed to start up with GEF seed capital. It will reach a size large enough to defray its overhead costs and to reach profitability only with substantial cofinancing. To be able to attract this cofinancing, the EEFF management will need to signal its commercial orientation and independence from the Foundation, and to showcase a number of initial successful projects. The GEF TA component will support putting those first projects together and to carry out their careful monitoring and evaluation and their dissemination. It will be investigated during further project preparation how to incorporate into the performance contract for the EEFF management an incentive for proactive solicitation of cofinancing.
- Energy consumers are reluctant to borrow for energy efficiency investments. The project is designed to mitigate this risk by collaborating with partners in project identification and development who already have established connections with potential EEFF clients. Those partners will be trained, particularly in the packaging of bankable projects, under the GEF TA component, and they will receive an incentive in form of a finder's fee for projects accepted for financing. In addition, EEFF management will engage in intensive marketing of EEFF products, particularly with senior management of targeted clients. One particular reason why borrowers might be reluctant might be that energy price signals don't encourage end user interest in implementing energy efficiency measures. Energy prices in Romania are increasingly market-based. Should they fall in real terms, prospects for quick-payback projects would be diminished. In that case, the EEFF management would need to concentrate project development in those technologies and sectors which are less affected by energy price reductions. In fact, the highly favorable financial returns of many current energy efficiency investments suggests that some downside price risk can still be absorbed.

- Projected energy savings and improved cash flows do not materialize: Only proven energy saving technologies, which have delivered sound energy savings in a variety of circumstances internationally, will be eligible for financing. Due to the lack of experience with the implementation of energy saving technologies in Romania, feasibility studies may overstate energy savings, actual costs may differ, or contractors may be inexperienced. Any of those factors could impact negatively on actual savings and financial results. The project will employ a range of measures to ensure that ensuing risks are minimized: Collaboration with qualified engineering and financial consultants during project development, comparison of saving predictions against benchmarks during project due diligence, and intensive monitoring of the first implemented projects to ensure that funds where spent on the measures identified, measures were implemented properly and devices operated as designed
- EEFF clients do not repay loans: Communism has created a non-payment culture which is still not completely abolished. The full collection of interest payments and principal repayments is, however, of paramount importance for the success of the EEFF. Strict creditworthiness criteria will be established, and the EEFF management will thoroughly screen the credit standing of potential clients, and collaborate with partners in the monitoring of clients and the collection of payments. Innovative collateralization methods also are being explored.
- Technically trained specialists have difficulty adapting to a truly commercial environment: During the past ten years, many professionals have been trained in technical energy efficiency skills. Their financial skills, particularly in the packaging of bankable projects has however been neglected. For the sustainability of energy efficiency financing, professionals need to combine those skills. The EEFF management may want to choose those organizations as partners in project development who have already demonstrated that they can successfully and sustainably provide services to clients in the industrial and other sectors, for example some of the business advisory centers, or some of the sectoral research institutes.
- Effective EEFF manager cannot be secured and retained: The success of the proposed project hinges on the identification and performance of a professional EEFF management team. Its recruitment needs to start well before implementation commences so that the management team can initiate the project pipeline development and enter into agreements with partners and allies. A competitive remuneration package with incentives for successful performance and credible assurances that government interference in financing decisions will be minimized are two important factors in being able to attract and retain professional staff.
- EEFF overhead costs surpass critical limits: The EEFF has been designed as a professional entity and is expected to be staffed by top professionals to ensure a successful project. This will lead to relatively high overhead costs. The existence of the GEF contingent grant may tempt the EEFF management to be lax with respect to cost control. To avoid that operating costs get out of hand, the management performance contract should provide for adequate incentives for cost control. The collaboration with experienced partners, e.g., from the banking sector, would contribute to keeping overhead costs under control.
- Failure of early projects does not demonstrate viability of the energy efficiency financing: EEFF needs to be able to establish a track record of successfully implemented projects at the very beginning. Only then will EEFF management be able to attract further clients and commercial cofinancing. In order to achieve these early successes, creditworthy borrowers and projects with high success rates need to be carefully selected, implemented and monitored. Tying the remuneration of EEFF management to the successful performance of early projects would further reduce the risk of early failures.

In the worst case scenario -- protracted economic problems, no or very little cofinancing, scant interest of clients to apply for financing from the EEFF – GEF and the Bank would exit from the project early. Under such a scenario, operating costs would not be covered by the return from investments. If this indicator falls below a certain benchmark, the project would be cancelled. The implementation agreement between World Bank and Foundation and the management contract between Foundation and EEFF management would contain clauses to this effect.

G: PROJECT PREPARATION AND PROCESSING

G.1. HAS A PROJECT PREPARATION PLAN BEEN AGREED WITH THE BORROWER (SEE ANNEX 2 TO THIS FORM)?

Under preparation.

G.2. ADVICE/CONSULTATION OUTSIDE COUNTRY DEPARTMENT:

EASEG: China Energy Conservation Projects I and II, Thailand Energy Conservation Project
ECSSD – ECA Environment and Social Sustainable Development
ENVGC – GEF Coordination Unit
Energy Efficiency Thematic Group

Alain Soulard, FRO, peer reviewer

Charles Feinstein, INFES, peer reviewer

William Chandler, PNL/Battelle, STAP reviewer

G.3. COMPOSITION OF TASK TEAM:

Varadarajan Atur, Program Team Leader
Bob Taylor, EASEG, Senior Economist/Thematic Group Leader
Anke Meyer, Energy Efficiency Specialist (Consultant)
Doina Visa, Private Sector Development Specialist
Bernard Baratz, ECSSD, Principal Environmental Specialist
Elly Gudmundsdottir, LEGEC, Legal Adviser
TBD, Financial Management Specialist
TBD, Procurement Accredited Specialist

G.4. QUALITY ASSURANCE ARRANGEMENTS:

The project team is highly qualified in the fields of Romanian energy sector and private sector development and energy efficiency. The Program Team Leader is involved with the restructuring of the Romanian power sector. The project team includes energy efficiency specialists who bring experience from Bank-executed energy efficiency projects in various countries and sectors, in Eastern Europe, Asia, and Latin America. The private sector development specialist focuses on institutional matters related to the relationship between the public and the private sector and NGOs. US technical advisors with international experience in energy fund design and development, and in market assessment are advising the Bank and the local project preparation team in the design of the project and form an integral part of the project preparation team. The

financial management needs of the project will be assessed by the Financial Management Specialist who will be responsible for ensuring that the financial management arrangements satisfy the requirements of OP/BP 10.02. The Sector Manager provides overall quality control.

In addition, several groups have been involved and will continue to be consulted by the project team:

- Several senior Romanian energy efficiency and energy sector /private sector specialists have consistently been sought out for frank advice.
- Views on the design of the financial facility have been exchanged with Bank financial sector specialists.
- Core members of the Energy Efficiency Thematic Group are discussing on a regular basis issues of GEF contingent finance, which is a new concept that is starting to be introduced in the design of several GEF projects.
- The project team has frequently sought support and frank discussions on substantive issues of the contingent finance concept with staff of ENVGC and GEFSEC.

G.5. MANAGEMENT DECISIONS:

Issue	Action/Decision	Responsibility
Extensive project implementation period and exit date for GEF	After first few years of implementation consider supervision only once per year	

Total Preparation Budget

A PDF-B grant of US$ 350,000 has been provided by the GEF to assist the Borrower in project preparation. Cost to date: US$ 112,043 (as of 8/22/00).
The Bank preparation and appraisal budget amounts to US$ 206,200. Cost to date: US$ 79,320 (as of 8/22/00).

Further Review [Expected Date]: Project Appraisal in March 2001.

Varadarajan Atur	Hossein Razavi	Andrew Vorkink
Team Leader	**Sector Manager/Director**	**Country Manager/Director**

10/4/2000 3:22 PM

Annex 1

Project Design Summary

Hierarchy of Objectives	**Key Performance Indicators**	**Monitoring & Evaluation**	**Critical Assumptions**

Hierarchy of Objectives	Key Performance Indicators	Monitoring & Evaluation	Critical Assumptions
	Sector Indicators:	**Sector/ country reports:**	**(from Goal to Bank Mission)**
a. Sector-related CAS Goal: • Promoting structural reform and private sector development • Protecting and enhancing the environment	• Increasing share of private industrial sector in GDP, investment and lending • Recording of real reductions in air pollution emissions • Recording of real reductions in greenhouse gas (CO2) emissions	• GoR and NBR statistics • National and Local Environmental Reports • Emission Reduction Monitoring Reports	**Bank Mission:** Private provision of energy services without significant negative environmental impact
b. GEF Operation Program: Removal of barriers to energy efficiency	• Energy intensity of key industries and other energy consumers • Carbon intensity of the economy	• National Communication to the UNFCCC	**GEF Mission:** Reduction of greenhouse gas emissions, mainly CO2
Project Development Objective:	**Outcome / Impact Indicators:**	**Project reports:**	**(from Objective to Goal)**
Foster a large increase in energy efficiency investments:	See below	Implementation progress, evaluation and completion reports	Macroeconomic conditions and environmental policies do not discourage energy efficiency investments
1. Development and implementation of commercially viable energy efficiency investments which decrease energy consumption.	• Increase in gross investment in energy efficiency • Reduction in energy consumption and energy bills • Reduction in emissions of local air pollutants	Implementation progress, evaluation and completion reports	(same)
2. Developing the knowledge and mechanisms necessary for financiers and end-users to fund energy efficiency projects	• Strong level of energy efficiency projects by private financial institutions	• Quarterly updates on status and use of funds • Annual Implementation and Performance Evaluation Reports which track competing products	(same)
Objective Removing barriers to market-oriented transactions and increasing private sector	• Number of win-win energy efficiency projects with commercial banks	• Quarterly updates on status and use of the GEF facility • Annual Implementation	Macroeconomic conditions and environmental policies do not discourage energy efficiency

Hierarchy of Objectives	Key Performance Indicators	Monitoring & Evaluation	Critical Assumptions
investments	participating in financing • Replication of the sustainable concept in other countries of the region	and Performance Evaluation Reports	

Hierarchy of Objectives	Key Performance Indicators	Monitoring & Evaluation	Critical Assumptions
Output from each component:	**Output Indicators:**	**Project reports:**	**(from Outputs to Objective)**
Proven, sustainable track record of commercially profitable energy efficiency projects	• Number of projects financed • Lending volume • Energy savings • EEFF profitability • Participation of co-financiers in EEFF project activity	Implementation Reports	• Projected savings and improved cash flows are achieved • Energy price signals encourage end user interest and motivate a full range of energy saving measures • Financing facility borrowers repay loans
Increased capacity to identify and deliver energy efficiency projects	• Number of projects identified and presented for funding	Implementation Reports	• Market-based skills are adapted and used by technically trained specialists
Project Components / Sub-components:	**Inputs: (budget for each component)**	**Project reports:**	**(from Components to Outputs)**
Energy efficiency financing facility (EEFF)	• US$ 9 million GEF seed capital of which US$ 0.1 million are estimated to be a final grant	• Implementation progress reports • Supervision reports • Project management reports	• Effective fund manager can be secured and retained • EEFF overhead costs are contained • Energy consumers are willing to borrow for EE investments • Adequate cofinancing can be secured

Hierarchy of Objectives	**Key Performance Indicators**	**Monitoring & Evaluation**	**Critical Assumptions**
Capacity building activities	• US$ 1 million technical assistance grant	• Implementation progress reports • Supervision reports • Project management reports	• Success of early projects to demonstrate viability

Annex 2: Incremental Cost Analysis

CONCEPT

Significant global environmental benefits can be achieved by reducing the energy consumption of all end use sectors throughout Romania. Despite the large potential for financially viable energy efficiency investments in Romania, very few such investments are being undertaken. Essentially, the market for energy efficiency financing is not functioning in Romania. The overarching barrier to energy efficiency investment is an unwillingness of banks to extend commercial credit for these projects: lending institutions consider both the costs and the risks of lending for energy efficiency at this time to be too high. The following barriers are the major causes of the financing gap (for details see section B.4.1):

1. Transaction costs of identifying, developing and financing relatively small energy efficiency investment projects are high.
2. Perceived risk of financing energy efficiency project is high.
3. Combinations of financial and technical skills, necessary to successfully develop energy efficiency projects, are currently not available in effective packages in Romania.

This project is designed to address and substantially reduce the barriers to expanding commercial energy efficiency investment by: (a) using the least amount of GEF resources possible, and leveraging GEF funds to the greatest extent possible with commercial funds, and (b) avoiding provision of any grants to end-users for commercially viable investments. Hence, it is proposed to adopt a "contingent financing" approach by creating and operating a market-based energy efficiency financing facility (EEFF). It will be supported by a GEF non-grant modality (Contingent Grant), providing an estimated US$9 million in seed capital for a revolving fund which would finance energy efficiency activities on commercial terms, and a GEF Technical Assistance grant (TA component) of US$1 million for support and evaluation activities. Together these two components would foster a large increase in commercial financing of energy efficiency projects in Romania.
GEF lead participation is critical for the project. Without GEF involvement in capitalizing the EEFF and supporting initial project development, a baseline scenario would include a certain degree of progress, e.g. on capacity building and in some investment activity, mostly financed from internal funds. However, meaningful market-based energy efficiency investment will remain suppressed, as the basic problems which have impeded investment in the past remain unsolved. Perceived high risks and transaction costs involved in supporting energy efficiency investments within the currently undeveloped market continue to cause existing financiers to pursue other opportunities and agendas.

BARRIER REMOVAL STRATEGY

The project will substantially overcome the previously identified barriers by establishing a proven track record of commercially viable energy efficiency projects, achieved without interest rate subsidies to end-users. This experience will aid in convincing other commercial financing institutions that many of the risks in energy efficiency project lending are only perceived risks and/or can be managed, and that initial costs of getting into this

specialized business are worth incurring or can be reduced based on prior experience such that it can be a profitable business line.

The project will aid in institutional development in Romania by providing both finance and specialized technical expertise in the appraisal and packaging of bankable energy efficiency projects within one institution for the first time. The project will establish a specialized "one-stop shop" for enterprises seeking financing and technical assistance for such investments.

Finally, the project will contribute to the increased flow of information, training and technical assistance to assist enterprises and other energy end users in identifying and preparing commercially attractive energy efficiency investments.

CONTINGENT FINANCE MODALITY

A small part of GEF funds will provide technical assistance for non-commercial but necessary support and evaluation activities. The majority of the GEF contribution to the project, the GEF contingent grant, will be used as seed capital to finance energy efficiency investments. It will help overcome the existing "financing gap" by providing access to project-based financing for Romanian energy end-users. Under the contingent finance modality, it is important to distinguish between the *contingent grant* and the *final (or net) grant*.

- The initial GEF grant, or **Contingent Grant**, supporting the investment component, is a gross grant. Here it takes the form of seed capital for the EEFF. The distinction between a conventional grant and a Contingent Grant is that the latter is returned partially or fully to the initial beneficiary, in this case the Foundation, depending on the project achieving expected or better than expected benefits.
- The Contingent Grant differs from the **Final Grant,** also known as the "net grant". At the end of the project, as much of the contingent grant as possible will be returned to the Foundation, for deployment for other priority GHG mitigation projects in Romania, to be agreed with the Bank and GEF. If the return is lower than expected because of factors directly linked to the performance of the EEFF, the contingent grant is partially or fully converted into a grant. The amount which cannot be returned is the Final Grant. While estimates can be prepared based on likely projection of the funds operations, the size of the Final Grant will not be known until the project closes.
- The **Incremental Cost** of the investment component is equal to the Final Grant, plus the time-value of the money returned at the end of the project to the Foundation. Because the amount of the Final Grant will not be known until project closure, the incremental cost, demonstrated in actual practice, also will not be known until project closure.

The advantage of the contingent finance approach is its inherent ability to match the net GEF grant (equal to the Final Grant amount) with the actual incremental costs. The incremental cost payments of the Final Grant will be limited to the amount required to actually overcome the barriers to sustainable commercial financing of energy efficiency investments, as borne out during actual market conditions and project implementation. Overpayment of grant resources for activities which are initially considered risky, but end up yielding commercial returns is avoided. The contingent finance concept also offers exceptional direct GHG reduction value for GEF investment (see below).

SIZE OF TA COMPONENT AND CONTINGENT GRANT

TA Component. The US$ 1 million assistance component will fund both activities to overcome energy efficiency investment barriers and to monitor and verify carbon emission reductions to be reported to GEF.

The Foundation-led training and information dissemination activities will include the project's main efforts to overcome consumer-side investment barriers. Assistance will be provided to end-users to cost-share techno-economic feasibility studies to facilitate the development of the initial pipeline of EEFF projects. This buy-down of early stage development costs will help demonstrate the feasibility of the EEFF financial products. This project will build upon the results and coordinate with the capacity building activities

of the UNDP/GEF project which is expected to start implementation in fall 2000. The exact composition and extent of the TA activities will in part depend on the exact definition of activities under the UNDP project.
Technical Assistance will also be provided to staff of the EEFF manager, partners in project identification and development, and consultants to increase technical capability and familiarity with energy efficiency projects.
Finally, the TA component would also cover the costs of the Foundation for monitoring and evaluation of GHG emissions reductions, and the reporting of results to the GEF, as well as general monitoring, evaluation and dissemination of project results. The total cost of those technical assistance activities is estimated to be US$ 2 million over a period of eight years. Bilateral donors have signaled their interest in contributing to the financing of the TA costs. The GEF-financed portion of the total TA costs is assumed to be 50%, i.e., US$ 1 million.

Investment Component
Contingent Grant. The level of initial GEF seed money has been estimated at $9 million (to be confirmed at project appraisal). The provision of these funds will serve three purposes: It will be a signal to the market, will finance initial demonstrations of successful projects, and will allow the set-up of the investment financing facility. Analysis based on a financial model of the EEFF suggests that an amount of US$ 9 million can achieve these purposes and attract significant co-financing. This will be needed to reach a portfolio of sufficient size to defray the high total amount of transaction costs. However, due to the barriers discussed above, co-financiers are unlikely to invest in the EEFF without a demonstrated track record of well-performing loans and a healthy pipeline of future projects. The GEF seed money will therefore be most likely the sole source for the initial disbursements, and is needed to fill the "financing gap" present in the Romanian market. There is a small chance that some cofinancing agreements could be secured upfront, particularly from bilateral donors, if it is known that the GEF supports an energy efficiency financing modality. A GEF lead of substantial size is however indispensable.
Final Grant. The main factors determining the size of the final grant are exactly those that determine the profitability of the EEFF. The EEFF is expected to have high initial start-up costs and transactions costs, which will be difficult to recover until the lending volume reaches levels high enough to defray those costs. Substantial cofinancing will be required to accommodate higher lending volumes, particularly in the middle period before the outstanding loans generate a sufficient flow of interest income and loan repayments to be revolved. The size of EEFF projects is another factor determining profitability and final grant size. Transaction costs are rather insensitive to project size and therefore smaller projects have comparatively smaller profit margins (unless procedures can be developed which simplify loan preparation considerably for those projects).
The final grant will be equal to the contingent grant (US$9 million seed money) less the final book value of the portfolio of investments made by the EEFF (cash balance plus present value of outstanding principal less the amount owed to co-financiers). While the exact amount of the final grant will not be known until project closure, our analysis has shown that under realistic assumptions and an improving macroeconomic performance of the Romanian economy it will likely be very small. At the lower bound the final grant might be negative, representing a high IRR for the GEF money. The upper bound of the final grant would be the US$9 million initially contributed as contingent grant by the GEF.

The results of a preliminary sensitivity analysis (see Table 1) show that the level of the final grant can vary from -$1.7 million (low case) to more than $4 million (high case). In several scenarios, the entire amount of the GEF seed capital becomes a grant, and the co-financiers receive lower than expected returns on their investment. The key variables determining the level of the contingent grant are the credits spreads which can be charged by the financing facility, the loan default rate, and the overhead costs.

Table 1: Preliminary Sensitivity Analysis of Selected Parameters

Variable (all in US$ 1000s)	**Final Grant**	**Total Disbursements**	**Amount of Co-financing Required**	Returned to Foundation **(in 2000$)**
Reference Case (see Table 1 in Annex 4)	137	90,650	15,746	5,999
Credit spread-low case (short @ 4%,5%,6%, medium @ 6%,7%, long @6%)	5,155	90,650	19,618	2,603
Credit Spread-high case (short @7%, 9%, 10%, medium @ 10%, 11%, long @11%)	-1,719	90,650	14,590	7,255
Default rate - increase by 50%	3,260	90,650	18,034	3,885
Overhead costs – increase by 30%	4,379	90,650	19,363	3,127

Provision of incentives to minimize the final grant amount. The EEFF management will be on performance contract with the compensation tied directly to EEFF performance. This will maximize EEFF profitability and in turn the return of GEF funds to the Foundation for use in other GHG projects.

Incremental cost of the project: The incremental cost of the project is composed of the incremental costs of the investment component (final grant plus time value of GEF money) plus the incremental cost covered by the TA component. As noted above, it will be unknown until the closure of the project; a preliminary estimate is in the range of US$ 3 million.

LEVERAGING OF GEF FUNDS

The EEFF will highly leverage the initial GEF seed capital by reinvesting interest and principal repayments for project loans and by attracting commercial co-financing to its pipeline of energy efficiency projects. With financing contributions of US$ 9 million by GEF, an estimated US$ 16 million in commercial cofinancing, and US$ 23 million in contributions by EEFF clients, a total of US$ 113 million in energy efficiency investment is estimated to be generated through EEFF operations over an eight year period of operation. The initial GEF money will thus be reinvested many times over.

MONITORING AND EVALUATION

Monitoring and evaluation of the project is critical to establishing a sound precedent for non-grant mechanisms in the array of GEF modalities. The design of performance indicators will be advanced during the preparation period. The indicators and monitoring procedures will be refined during the initial implementation period. Regular reporting of the EEFF performance, most likely on a quarterly and annual basis, will be required, together with regular monitoring and evaluation associated with the energy efficiency projects.

Indicators will include for example: (i) the energy savings resulting from the investments funded by the EEFF; (ii) the associated emissions reductions of local air pollutants (sulfur dioxide, nitrogen oxides and particulates) and of greenhouse gases (carbon dioxide); (iii) the number and size of projects financed and implemented per year; (iv) the level of co-financing from commercial financing institutions; (v) standard financial management and portfolio performance indicators for the EEFF; and (vi) other standard indicators for overall project implementation. These specific project-level indicators will be developed and target values agreed during appraisal.

Due to the large number of projects to be financed and the use of fairly standard energy efficiency technologies, it is proposed that sub-project monitoring and evaluation in general is on the basis of a short form to be developed and included in the Project Implementation Plan. This would also contain the costs of the monitoring component. For the first projects, however, a verification of the actual savings is considered necessary, since there has been so little experience with energy efficiency activities in Romania to date. Borrowers and potential cofinanciers will want to know the actual costs and benefits of energy efficiency investments before they commit to participating in the project.

PROJECT BENEFITS: ENERGY SAVINGS & CARBON REDUCTIONS

Without GEF involvement, a baseline scenario would include a certain degree of progress, but meaningful energy efficiency investment will remain stifled, as the basic problems that have impeded investment in the past remain unsolved.

The estimate of energy savings under the baseline will be based on the level of energy efficiency investments in the past few years, projected into the future, in the absence of the proposed GEF project. It will be derived from both the Market Analysis (see Annex 5) and the results of a detailed market survey. The survey has targeted about 30 Romanian companies that have already undergone detailed energy audits in the past few years. The companies are active in the same industrial subsectors where short payback projects have been identified as part of the market assessment (see Table 2 in Annex 5). These companies represent the portion of the market that is most aware of the benefits of energy efficiency investments and therefore most likely to finance efficiency investments in the absence of the GEF program by mobilizing internal resources, commercial loans, or securing financing from other sources.

The results from the completed survey will be projected to the projected market potential and will result in the amount of investment in industry expected in Romania without the GEF project. To this will be added the projected investment in other sectors which will

result from such projects as the district heating and ESCO financing schemes of the EBRD.

The increased level of energy efficiency financing from the EEFF will result in higher energy savings and increasing reductions of carbon emissions compared to the baseline. Assuming the EEFF projected financing level over eight years is US$ 91 million, and that EEFF clients are responsible for an additional 20% of total investment costs, the project will reduce energy consumption by 273 million GJ and carbon emissions by 4.3 million metric tons during eight years of EEFF operation. The preliminary estimate for the cost of carbon reduction is below US$ 1 per ton of carbon avoided.

Table 2: Incremental Cost Matrix

	Baseline	**GEF Case**	**Increment**
Domestic Benefit	Lower energy intensity through baseline level of commercial investment in energy efficiency ($ savings);	Accelerated levels of improvements in energy intensity ($ savings), elevated amounts of commercial investment in energy efficiency	___ GJ savings
Global Environmental Benefit	Base case will produce reductions of tons Carbon from improved efficiency	GEF case will leverage $113 million (minus baseline estimate) in investment that would not have occurred otherwise, leading to a reduction in 4.3 million tons carbon (minus baseline estimate)	_____tons Carbon
Costs TA Costs Final Grant Time value of GEF funds **TOTAL**	 Tbd	 1 0.1 3 4.1	 Tbd

Annex 3

STAP Technical Review

And Responses to STAP Comments

STAP Review
Romania Energy Efficiency Project
Project Number: P068062

William Chandler
Senior Staff Scientist
Battelle, Pacific Northwest National Laboratory
Final Comments, 6 September 2000

General Comments

The objective of this proposed project–to "reduce greenhouse gas emissions in Romania through the development of a self-sustaining, market-based mechanism that will support the development and implementation of commercially viable energy efficiency investments"–is consistent with the principles of the Global Environment Facility and with the energy and environmental needs of Romania. The proposed approach is logical and straightforward.

Specific concerns expressed below are relatively minor and relate to ambiguity in the text, ambiguities with respect to project implementation and accountability. These comments should be taken as constructive, and not intended to encourage rejection or even delay in the project's approval. Specific actions I would urge include consideration of using the funds as equity rather than debt, and giving clearer definition to the role and sustainability of the proposed foundation.

In general, I find this effort laudable and would endorse it.

Specific Comments

Section A.1.: The document states: "The project will support the development and implementation of commercially viable energy efficiency investments, which can provide sustainable and increasing reductions in GHG emissions without public subsidy." The reviewer agrees that this approach–stimulating commercial investments–is feasible and sustainable. It may be unrealistic, however, to expect a "large increase" in such investment on the basis of this small program, which involves only $10 million of World Bank/GEF funds. An increase in the size of the program may be desirable.

Section A.2.: Drop "by project year" from the first criterion. Investments are "lumpy" and would better be evaluated over, say, a three-year period. That is, it is the overall result that is important, not the annual rate of investment.

Section A.3.: The first criterion–an increase in commercial efficiency lending–may require additional elaboration. It is difficult to measure efficiency lending because efficiency can embrace a wide variety of investments, and it is unlikely that a current baseline of investment exists against which to evaluate the effectiveness of the EEFF. Making this evaluation would require something like an economic baseline modeling effort, which would be expensive, difficult, and not all that productive.

Section A.4.: I would be careful about claims such as the following: "Romania's energy intensity, which is mirrored by its GHG intensity, is about five times that of UK, France or Germany." This comparison almost certainly was made on the basis of GDPs estimated using current exchange rates. Most energy and environmental analysts consider energy intensity measured on the basis of purchasing power parity (PPP) to be more valid (although still uncertain). Romania's energy intensity would remain relatively high, but not a factor of five higher than European Union nations. I recommend using International Energy Agency estimates using PPP.

Section B.4.1.: One might further justify (with numbers) the following sentence: "Although there have been many donor-funded technical assistance and technical demonstration projects to improve energy efficiency, these have not achieved results in terms of increasing investments on the ground." This reviewer doubts very that the first part of the sentence–"many...projects"–is objectively true. That is, the efficiency effort made by the international community is probably small in absolute terms. More likely, there have been some poorly designed "tied-aid" projects intended to promote sales of European and American products, though probably not much even of that.

The following sentences are mostly on-target: "The overarching barrier to energy efficiency investment is a lack of commercial credit for these projects: lending institutions consider both the costs and the risks of lending for energy efficiency at this time to be too high. The recent failure of an EBRD project provides instructive experience. It established a credit line for energy efficiency projects with a Romanian bank that failed to disburse due to lack of incentives and interest and inadequate sub-project development." This discussion is missing two important elements, however. First, equity is not mentioned, but can be a powerful tool for efficiency investment, particularly when coupled with investments to improve product quality and to increase output. Second, the failure of EBRD (and IFC) lines of credit almost certainly are related more to constraints internal to the EBRD (and IFC) and its lines of credit–the rules, regulations, management style–than to any problem with the market (though problems certainly exist in the market).

The following sentence is almost certainly true, but can be taken out of context: "The transaction costs of identifying, developing and financing energy efficiency projects are high. The development of a sound energy efficiency loan portfolio requires a level of specialization that entails high initial costs." If the words "energy efficiency" were deleted, the sentence would still be true for Romania.

The following statement is no longer true (at least outside Romania): "...there is a common perception outside of the energy efficiency community that the benefits of these projects are only "social and environmental benefits", and some people are skeptical about financial profitability." Enron, hardly an environmental advocacy group, currently invests about $1 million per day in efficiency projects in its customers' facilities.

This statement is probably untrue: "Loan repayment periods of 2-4 years will be required for most projects..." At least if true it is not a problem unique to efficiency investing.

How is the following problem different from an investment in, say, increasing output of diamonds? "In enterprises that are typically short of cash (even if profitable), there may be dangers that savings on energy bills will be diverted to make other payments, rather than loan repayments."

The following point is perhaps the most relevant to project justification: "While there is a wealth of studies on technical and economic potential for energy efficiency, these are of little use for bank loan officers. A similar lack of ability to combine technical and financial skills can be observed on part of the consumer/enterprise side." These two sentences are exactly right. However, the discussion should also call attention to a key, missing skill in both the banks and the enterprises, which is in the field of accounting. Making sense of balance sheets in the region, and especially when it comes to expenses such as energy, is a substantial barrier to efficiency investment.

Section C.1.: The question arises as to whether the "Foundation" is merely a pass-through organization from the GEF to the private sector. The question of how the Foundation survives beyond the GEF project is not adequately addressed (although allusion is made to this question in a table footnote and an aside about a 1 percent "finders fee'). Specifically, the proposal should embrace the concepts of "core funding" (to attract competent staff) and self-sufficiency. The latter should be a fixed date by which staff with have to find funds to sustain their work. Is also critical that the core principles of the foundation be articulated and that the lines of accountability for management and success of the foundation be drawn. This effort may require drafting of a charter or the selection of a model charter.

Section E.4.: The proposal defers spelling out role and responsibilities of Foundation and the financial institution.

Section E.4. and E.6: The term key stakeholders is used, but stakeholders are not identified. If working groups have been formed and meetings held as reported, then stakeholders can probably be defined more specifically.

Responses to
STAP Review
Romania Energy Efficiency Project
Project Number: P068062

William Chandler
Senior Staff Scientist
Battelle, Pacific Northwest National Laboratory
Final Comments, 6 September 2000

General Comments

Specific actions I would urge include consideration of using the funds as equity rather than debt, and giving clearer definition to the role and sustainability of the proposed foundation.

Response: The project team considers that equity investments should follow at a later stage, when sufficient debt investments have taken place to assure revolution of funds. Considering that equity is the highest risk capital, it should be undertaken only if market conditions require it and when exit is feasible. The project team recognizes that clearer definition to the role and sustainability of the proposed foundation is an important task during further project preparation which is explained in more detail below.

Specific Comments

Section A.1.: The document states: "The project will support the development and implementation of commercially viable energy efficiency investments, which can provide sustainable and increasing reductions in GHG emissions without public subsidy." The reviewer agrees that this approach–stimulating commercial investments–is feasible and sustainable. It may be unrealistic, however, to expect a "large increase" in such investment on the basis of this small program, which involves only $10 million of World Bank/GEF funds. An increase in the size of the program may be desirable.

Response: While GEF would only contribute US$ 10 million, the revolving nature of the EEFF and the cofinancing attracted would result in estimated total investment to be leveraged by the EEFF in the order of US$113 million. This would constitute a large increase.

Section A.2.: Drop "by project year" from the first criterion. Investments are "lumpy" and would better be evaluated over, say, a three-year period. That is, it is the overall result that is important, not the annual rate of investment.

Response: True, investments are lumpy, but with the help of the performance indicators, it will be monitored that EEFF in fact is making a certain number of loans (of a certain size) every year which would be critical in order to be able to cover operating costs. The project team will continue to devise operational performance indicators and benchmarking criteria.

Section A.3.: The first criterion–an increase in commercial efficiency lending–may require additional elaboration. It is difficult to measure efficiency lending because efficiency can embrace a wide variety of investments, and it is unlikely that a current baseline of investment exists against which to evaluate the effectiveness of the EEFF. Making this evaluation would require something like an economic baseline modeling effort, which would be expensive, difficult, and not all that productive.

Response: The reviewer's argument is valid in general. The project team is however currently establishing a baseline of industrial energy efficiency investment which shows that there is very little if any commercial lending for energy efficiency. Against this baseline future lending activities to be surveyed could be evaluated.

Section A.4.: I would be careful about claims such as the following: "Romania's energy intensity, which is mirrored by its GHG intensity, is about five times that of UK, France or Germany." This comparison almost certainly was made on the basis of GDPs estimated using current exchange rates. Most energy and environmental analysts consider energy intensity measured on the basis of purchasing power parity (PPP) to be more valid (although still uncertain). Romania's energy intensity would remain relatively high, but not a factor of five higher than European Union nations. I recommend using International Energy Agency estimates using PPP.

Response: The reviewer is absolutely correct with his observation; the energy intensity comparison is on the basis of current exchange rates. When using PPP GDP, both Romania's energy intensity and CO2 intensity are 2-3 times higher than in the USA, or in Germany, France, UK. Romania's energy intensity and CO2 intensity are the highest for all countries in Central Europe.

Section B.4.1.: One might further justify (with numbers) the following sentence: "Although there have been many donor-funded technical assistance and technical demonstration projects to improve energy efficiency, these have not achieved results in terms of increasing investments on the ground." This reviewer doubts very that the first part of the sentence–"many...projects"–is objectively true. That is, the efficiency effort made by the international community is probably small in absolute terms. More likely, there have been some poorly designed "tied-aid" projects intended to promote sales of European and American products, though probably not much even of that.

Response: EE-related TA after 1990 is listed in the EU Synergy Survey of Energy Co-operation in Romania. Bilaterally and multilaterally funded projects are almost innumerable. True, most of those projects did not result in any investment.

The following sentences are mostly on-target: "The overarching barrier to energy efficiency investment is a lack of commercial credit for these projects: lending institutions consider both the costs and the risks of lending for energy efficiency at this time to be too high. The recent failure of an EBRD project provides instructive experience. It established a credit line for energy efficiency projects with a Romanian bank that failed to disburse due to lack of incentives and interest and inadequate sub-project development." This discussion is missing two important elements, however. First, equity is not mentioned, but can be a powerful tool for efficiency investment, particularly when coupled with investments to improve product quality and to increase output. Second, the failure of EBRD (and IFC) lines of credit almost certainly are related more to constraints internal to

the EBRD (and IFC) and its lines of credit–the rules, regulations, management style–than to any problem with the market (though problems certainly exist in the market).

Response: The need for equity is another important part of the overall menu of instruments to further energy efficiency. The project team has discussed the need for providing equity also, but it is fairly convinced that at this point debt is the more pressing need. Credit lines in general in Romania have fared very badly, and this was due to a mix of problems with the market and with difficulty to access those credit lines and internal regulations, e.g., the over-collateralization.

The following sentence is almost certainly true, but can be taken out of context: "The transaction costs of identifying, developing and financing energy efficiency projects are high. The development of a sound energy efficiency loan portfolio requires a level of specialization that entails high initial costs." If the words "energy efficiency" were deleted, the sentence would still be true for Romania.

Response: The comment is correct, however, the project team noticed that the kind of project financing which is ideally suited to energy efficiency investments is not common at all in Romania. This does in fact require high initial set-up cost due to the very specialized nature of skills and of the market.

The following statement is no longer true (at least outside Romania): "...there is a common perception outside of the energy efficiency community that the benefits of these projects are only "social and environmental benefits", and some people are skeptical about financial profitability." Enron, hardly an environmental advocacy group, currently invests about $1 million per day in efficiency projects in its customers' facilities.

Response: In the overwhelming majority of discussions with Romanians in the financial and in the industrial sector, they articulated exactly the statement reported above. The lack of successful energy efficiency projects in Romania is probably responsible for this perception.

This statement is probably untrue: "Loan repayment periods of 2-4 years will be required for most projects..." At least if true it is not a problem unique to efficiency investing.

Response: Yes, the requirement of longer-term loans are probably common for most lending operations other than for working capital. We should probably leave this out.

How is the following problem different from an investment in, say, increasing output of diamonds? "In enterprises that are typically short of cash (even if profitable), there may be dangers that savings on energy bills will be diverted to make other payments, rather than loan repayments."

Response: In combination with the difficulty of collateralization, the challenges of securing repayments seem to be larger for energy efficiency loans in the particular environment of a former command economy.

The following point is perhaps the most relevant to project justification: "While there is a wealth of studies on technical and economic potential for energy efficiency, these are of little use for bank loan officers. A similar lack of ability to combine technical and financial skills can be observed on part of the consumer/enterprise side." These two sentences are exactly right. However, the discussion should also call attention to a key, missing skill in both the banks and the enterprises, which is in the field of accounting. Making sense of

balance sheets in the region, and especially when it comes to expenses such as energy, is a substantial barrier to efficiency investment.

Response: This point is well taken. Balance sheet and cash flow analysis is challenging in the former command economies and particularly in a still unstable macroeconomic situation.

Section C.1.: The question arises as to whether the "Foundation" is merely a pass-through organization from the GEF to the private sector. The question of how the Foundation survives beyond the GEF project is not adequately addressed (although allusion is made to this question in a table footnote and an aside about a 1 percent "finders fee'). Specifically, the proposal should embrace the concepts of "core funding" (to attract competent staff) and self-sufficiency. The latter should be a fixed date by which staff with have to find funds to sustain their work. Is also critical that the core principles of the foundation be articulated and that the lines of accountability for management and success of the foundation be drawn. This effort may require drafting of a charter or the selection of a model charter.

and

Section E.4.: The proposal defers spelling out role and responsibilities of Foundation and the financial institution.

Response: The Foundation is not merely a pass through. Originally, it was in fact conceived as a pass-through. The project team quickly realized that the Foundation needs to take on real responsibilities within the project. It will, under World Bank rules, carry out the tendering process for the management of the EEFF. It will be in charge of contacts with bilateral and multilateral donors who support the project with TA. It will carry out all non-commercial activities of the project, for example, monitoring, evaluation and dissemination of project results, and reporting to the GEF. It will supervise the management of the EEFF, and will have some role in making investment decisions. The current thinking is that it would approve the annual business plan but would not in fact have to sanction every single investment decision below a certain threshold to be determined. Finally, the Foundation will receive at project closure the GEF funds which have not been spent as TA or as final grant. To fulfill all those duties, the Foundation needs to be an organization with a small professional staff which has the potential to develop into one of the Romanian leaders of global environmental objectives. Adequate and stable funding mechanisms also need to be developed.

During further project preparation, in fact during the next three-four months, the role and responsibilities of the Foundation will be defined in detail, its charter will be drawn up, its members will be identified, and it will be registered. In parallel, the relationship with the manager/management company will be defined in detail, and their respective responsibilities, e.g. with respect to making investment decisions, will be delineated. The content of the performance contract between foundation and management of the EEFF will also be developed.

Section E.4. and E.6: The term key stakeholders is used, but stakeholders are not identified. If working groups have been formed and meetings held as reported, then stakeholders can probably be defined more specifically.

Response: The key stakeholders in this project are the following:

- *Companies in the industrial sector who would be the potential clients for the facility, and their associations;*

- *Manufacturers, contractors and other service providers, for example, ESCOs, research institutes and engineering and consulting companies, but also associations, catering to the industrial and other sectors, who would be targeted as partners and allies of the EEFF;*
- *Companies in the financial sector, particularly banks, but also leasing companies, who would be targeted as cofinanciers and potential partners of the EEFF; and*
- *Actors in the environmental sector who would be allies for the foundation, particularly those interested in global environmental issues.*

Annex 4
GEF Financing Modality: Technical Background

OBJECTIVE

The objective of the proposed GEF project is to foster a large increase in energy efficiency investments in Romania through development of self-sustaining, market-based mechanisms. The project will support the development and implementation of commercially viable energy efficiency investments, which can provide sustainable and increasing reductions in GHG emissions without public subsidy. The project will achieve this by buying down the perceived high risk and high transaction costs of initial investments, and overcoming the current barriers to expanding investment through the creation of a self-sustaining, market-based energy efficiency project development and financing facility.

Specific strategies for the facility include:

- Earn a "risk adjusted" market return[3]
- Don't crowd out the local market (e.g. Romanian banks) by replicating what they already do; instead fill a gap not presently being addressed (see below)
- Structure the facility in a way so that it will be attractive to sources of co-financing; in fact, this is the primary mechanism[4] for enlarging the facility's investment capacity over time
- Learning from past lessons, anticipate the need to provide technical assistance and incorporate this capability into the structure of the facility
- Leverage local resources (i.e. domestic financial institutions) as much as possible to minimize overhead costs such as those relating to collections, credit analysis, etc.

[3] Since there is no meaningful investment activity of this type at the moment, the intent is to price loans and/or investment on terms that are generally consistent with the nascent corporate finance market in Romania

[4] Although reinvested investment earnings will certainly enlarge the fund, they will likely do so at a slower rate than is possible by attracting co-investors to the fund.

- Structure the facility so as to minimize the opportunity for political influence in the commercial operations of the facility

The gap being filled by the facility includes the following:

- Deal origination – there is little money in Romania seeking these types of transactions
- Technical expertise – no Romanian financial institution has the combined expertise in energy efficiency analysis, structured finance and credit analysis
- Co-Finance – foreign banks with Romanian affiliates have limited country lending ceilings and therefore have difficulty leading transactions of any magnitude[5]. Romanian banks could be brought along as participants, perhaps on a pooled basis as they have limited lending capacity as well as expertise.

As the goal is to earn a market return (as opposed to making development-oriented investments), the facility will need to focus on transactions where credit risk is deemed to be "manageable." Therefore, the initial target market consists of:

- Creditworthy Romanian industrial companies which have substantial energy consumption (either stand alone, with collateral, or with credit enhancement such as guarantee or comfort letter)
- Structured transactions involving weaker credits where there is the ability to "trap" cash as in a project financing

With these conditions for a successful operation in mind, the project preparation team devised a two-tiered organizational structure, consisting of a Foundation, which would receive the GEF funds through the Government of Romania, and a manager of the facility in charge of the investment decisions (see Figure 1). The exact nature of the "manager" is still under investigation. Two options for procedures in administering the commercial aspects of the project will need to be examined in more detail during project preparation. The first option is to use a professional management company that will select projects and disburse funds according to the criteria in the management performance contract with the Foundation. The second option is to use a consultant who would become the Manager of the financing facility, similar to the set-up of the Romanian Social Investment Fund. It is crucial, however, that the entity in charge of the project portfolio make all decisions in a strictly commercial manner to demonstrate that energy efficiency is a bankable business. The management company/manager of the financing facility will also have to generate interest in the financial community to participate with cofinancing. It is unlikely that commercial entities would entrust their funds to an entity that is not clearly independent from the Foundation and operates within clearly defined commercial rules. In any case will the managing entity have to work with advisors and consultants for technical and banking services to minimize overhead costs.
In the following, details of the organization and financing modalities are described based on the first option of a management company ("FUNDCO"). This option is also the basis of the financial model that has been developed as a preliminary business plan of the financing facility.

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[5] A notable exception is where the Romanian borrower is a wholly-owned subsidiary of a creditworthy foreign company. In this case, it is not uncommon for the subsidiary to borrow from a local affiliate of a foreign relationship bank on the basis of a comfort letter provided by the foreign parent to the foreign bank.

FACILITY STRUCTURE AND RELATIONSHIPS

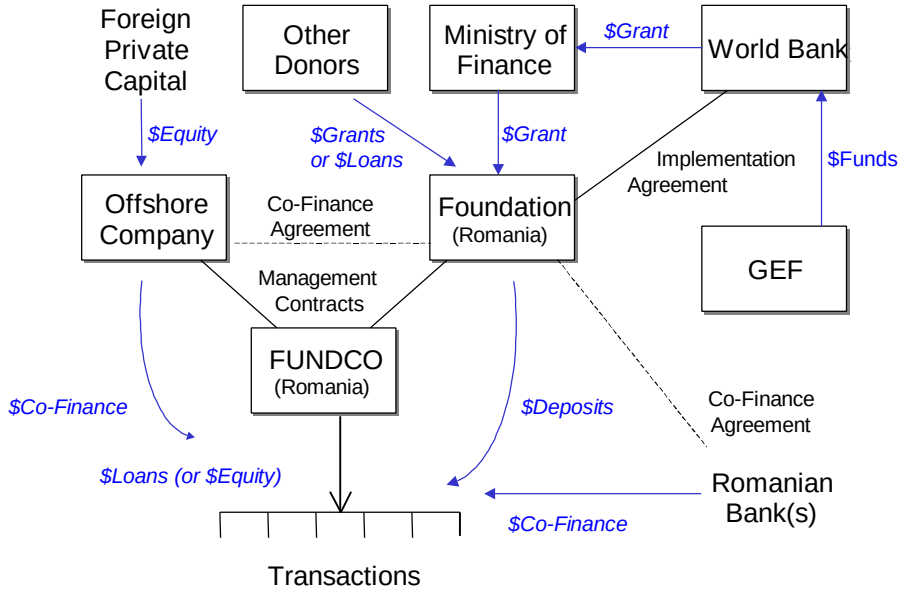
The overall institutional structure under consideration is depicted in Figure 1. The design objectives underlying the structure[6] include the following:

1. *Establish a Romanian Foundation that serves as a conduit for routing GEF money from GoR to FUNDCO.* GoR would be one of the founding members and have representation but would not control the Foundation. Even as a non-profit organization, the profit of the Foundation would be taxable. Since taxes paid to GoR would simply reduce the capital base of the Foundation, some form of tax holiday or even tax-exempt status for the Foundation would be sought, since it (i) would not pay dividends to its shareholders and (ii) all earnings would be recycled within the program. The Foundation will also undertake non-commercial technical assistance activities.
2. *Have investments "go around" FUNDCO so that FUNDCO itself does not become regulated as a "bank" or "fund", as those terms are defined under Romanian law.* In this sense, FUNDCO puts forward transactions for which it has given its approval to the respective investment committees[7] of the co-funders. Approved transactions would then be funded on a prorata basis from each funding source in accordance with the Co-Finance Agreement. If any investment committee declines a transaction, the remaining co-funders would have the option of proceeding without the participation of the dissenting co-funder(s).
3. *Enable foreign capital to come in through tax efficient means.* It is contemplated that an offshore entity would be established through which non-Romanian funds would be routed to avoid Romanian taxation on foreign investors' earnings.
4. *Ensure that* funds can be disbursed to borrowers once all terms and conditions of an Investment Committee approval for any specific transaction are satisfied.

6 There are several important parallels that can be drawn between this structure and those being utilized by both the Romanian-American Enterprise Fund (RAEF) as well as the Romanian Post Privatization Fund (RPPF).

7 In the case of the Romanian foundation, the Investment Committee function would reside within the FUNDCO.

Figure 1_. Structural Overview of Energy Efficiency Investment Program



MANAGEMENT COMPANY ("FUNDCO")

FUNDCO will have the following principal responsibilities: deal origination; credit analysis and due diligence; financial analysis; structuring (financial, commercial and risk mitigation); negotiation; documentation; portfolio management (e.g. monitoring and collections); financial reporting; and administration.

In addition, it is anticipated that the program may incorporate financing and investment from other sources including bilateral donors, development banks (e.g. IFC, EBRD), Romanian banks, and foreign equity investors.
In this regard, FUNDCO will also be responsible for marketing the investment program to the financing sources, assisting in the establishment of investment vehicle(s) through which those funds will enter the program, and providing similar facility management services as outlined above.
It is possible that an existing institution in Romania could assume these management activities. At this stage, it is anticipated that the function served by FUNDCO will be put out to bid. This was the procedure used by EBRD in the case of RPPF where 30 companies (i.e. investment banks, investment management companies, banks) responded to a RFP. The RFP for this project would not be exclusive to existing financial institutions as it is conceivable that Romanian entrepreneurs could propose a new company to serve as FUNDCO.
It is common fund management practice and strongly recommended that FUNDCO have an Investment Committee capable of critically evaluating, and in fact overriding, the investment recommendations of FUNDCO management. This mechanism adds discipline

and improves the quality of decision-making while providing a check against conflicts of interest. The Investment Committee may meet on a regular basis (e.g. bi-weekly, monthly) to review transactions over a certain dollar threshold. The committee would consist of the senior FUNDCO management and, for obvious reasons, would need to include highly qualified outside financial experts not otherwise affiliated with the program or any end users.

ADVISORS/CONSULTANTS

In order to minimize overheads, FUNDCO would rely upon outside advisors to provide a number of services. Services likely to be secured on a transaction-by-transaction basis include: engineering and technical analysis; legal; environmental risk assessment if necessary; and loan servicing, including collections. Services likely to be secured on a fixed price basis include: accounting; marketing; and lockbox and other routine banking services.

It seems logical to utilize the services of a Romanian bank to service loans and make collections from clients. This is a potentially time consuming and expensive task for which domestic banks are already generally well equipped. Therefore, it is expected that these and other routine banking services can be outsourced more economically than could be achieved should FUNDCO undertake these tasks itself.

PRINCIPAL AGREEMENTS TO BE DEVELOPED

GOVERNANCE

There are at least three levels of governance that must be addressed:

- FUNDCO
- Co-Funders as a group
- Romanian Foundation

As the FUNDCO would have its own shareholders (who would be the employees if FUNDCO consisted of a Romanian entrepreneurial group), it will have its own Board of Directors appointed by the shareholders.

As in the case of RPPF, it is anticipated there would be a “Supervisory Committee” that would be established to coordinate the activities of the co-funders in which personnel from each co-funder would participate.

A less obvious solution exists for the governance of the Foundation. There is a tension created by the fact that since the GEF money is coming through GoR, GoR will likely want to have a say in how the program is administered. At the same time, it is critical that FUNDCO be able to function free of any political interference from GoR. This tension is dealt with to a large extent by the existence of an Implementation Agreement between The World Bank and the Romanian Foundation which provides a measure of World Bank oversight to mitigate political interference. In addition, a tightly constructed Management Contract between the Romanian Foundation and FUNDCO providing for as much FUNDCO autonomy as possible is another risk mitigant. However, since the Management Contract can be terminated by the Romanian Foundation, it may be necessary to require World Bank approval under the Implementation Agreement to any such changes in FUNDCO status.

MANAGEMENT CONTRACT

The Management Contract governs the roles and responsibilities of FUNDCO in managing funds entrusted to it by the Romanian Foundation. In general, the agreement would cover the following topics: range of financial products (with provision for flexibility); credit and financial structuring criteria; portfolio allocation and return on investment targets; administrative policies and procedures, including risk management practices and reporting requirements; incentive compensation; and, boilerplate items such as representations and warranties, events of default, termination, indemnification, etc.
Although FUNDCO is not contemplated as being an investor in the financing facility (except to the extent it is bringing co-financing such as was the case with the RPPF manager), it must have financial incentives that reward it should return on investment targets be met or exceeded and penalized should they not be met.

CO-FINANCE AGREEMENT

The Co-Finance Agreement is the mechanism by which the activities of the various co-funding entities are coordinated. This agreement would contain procedures for coordinating investment approvals, ratios for investments to be made by individual funders, and so on. It would also likely create a Supervisory Committee, similar to that created for RPPF, that oversees the smooth functioning of the entire program.

PRODUCTS AND SERVICES

FINANCIAL PRODUCTS

The corporate finance market in Romania is a rather thin market with a limited number of banks making term loans to the most creditworthy borrowers at dollar denominated interest rates generally in a range of 12% - 15% and a maximum maturity of 3 years. The concept of cash flow based loans is almost unheard of in the country.
Hence, three potential products are presently contemplated:

- Cash flow-based term loans made directly to end users (either based upon cash flow plus the creditworthiness of the end user or on projected cash flow alone). Table 1 shows the assumptions which were made about those loan products in the financial model developed for FUNDCO;
- Cash flow-based loans made to ESCOs on a project-by-project basis; and, potentially
- "Performance" loans where FUNDCO partners with a supplier consortium and offers a total project package including engineering, equipment and financing.

Table 1: Key Financial Model Assumptions for Financial Products – Reference Case*

	Short-term	Medium-term	Long-term
Repayment (yrs)	1	2	3
Average size ($)	100,000	450,000	1,000,000
Proportion of new loans made	11%	71%	18%
Grace Period (months)	3	6	9
Proportion of Loans – "A" Risk	40%	70%	100%
Proportion of Loans – "B" Risk	20%	30%	No loans made
Proportion of Loans – "C" Risk	20%	No loans made	No loans made
Credit Spread – "A" Risk	5.5%	7.5%	10.5%
Credit Spread – "B" Risk	7.5%	10.5%	No loans made
Credit Spread – "C" Risk	10.5%	No loans made	No loans made
Default Rate – "A" Risk	1%	2%	7%
Default Rate – "B" Risk	5%	4%	No loans made
Default Rate – "C" Risk	7%	No loans made	No loans made
Advisory cost per transaction ($)	10,000	20,000	30,000

* Other key assumptions for the reference case which are independent of the tenor of the loan are: initial GEF seed capital equals US$9 million, required return to co-financiers equals 9%; the facility can implement a maximum of 28 loans per year; 1% finders fee to partners for all successful projects brought to loan closing; upfront documentation fee of 0.75%, upfront flat fee of 1% and annual monitoring fee of 1% of the outstanding principal balance.

In the first case, it is not desirable to undercut or compete with the local bank market. Rather, it is more effective to augment the offerings of domestic funding sources. Local banks indicated it would be desirable for FUNDCO to offer term loans with up to 3 years repayment for the following reasons:

- Cash flow-based lending by Romanian banks is almost non-existent
- The more likely sources of structured financing are local subsidiaries of foreign-owned banks who are under tight country lending limits and therefore would rather participate in, rather than lead, such transactions
- There is very little expertise, much less awareness, concerning investment opportunities in energy efficiency within the Romanian banking sector

Therefore, a preliminary conclusion is that the financing facility would not be competing with as much as catalyzing the domestic bank market with an outwardly similar loan product. This current lack of activity from the domestic banking sector is one reason why a partial credit guarantee has not been explicitly considered as one of the financial instruments. If however the financial sector starts to become more active in longer-term lending and should it demand a credit guarantee to mitigate some of the risks of energy

efficiency based loans, the facility should be able to offer such a credit enhancement product.

TECHNICAL ASSISTANCE

At least four types of technical assistance are required to support the lending program:

- Outreach activities associated with publicizing the program and educating potential end users about where and when the program can be advantageous;
- Working with end users and potential partners on identification and packaging of specific energy-saving projects so that they may be eligible for funding
- Training of FUNDCO personnel in structured finance techniques
- Training personnel of partnering Romanian banks in structured finance techniques

The costs of such activities would typically go beyond the financial means of the relatively small capitalization contemplated initially here. Similar to RPPF where EU Phare money is used to pay for management fees of the Fund Manager for the first three years of operation (thereafter is it planned the RPPF investment portfolio will generate sufficient cash to carry the management fee), a portion of the GEF funds will be separately allocated for technical assistance or funded from donor contributions. Technical assistance will be carried out through the Foundation the scope of the Management Contract with FUNDCO.

RISK MITIGATION

There are a number of risks inherent in investment activities such as those described above. Key risks are enumerated below together with a brief discussion concerning a risk mitigation strategy.

PAYMENT (I.E. CREDIT) RISK

As has been discussed above, the most significant risk in providing capital to Romanian companies is the risk of non-payment. The ongoing transition within the country and the associated macroeconomic measures being taken by the government to control inflation, stabilize the currency, and so on, place a heavy strain on Romanian companies doing business in a global economy. While borrowing conditions, particularly by Western standards, are harsh (i.e. very high dollar-denominated interest rates combined with very short tenors), the observed default rate on loans is quite low. For example, according to Banca Romaneasca, out of the 137 loans made through their small loan program with RAEF over the past 3 years, there are only 4 troubled loans: one borrower who has completely defaulted (now in litigation) and three others that require extensive efforts on the part of the bank to collect.

Common practices for mitigating payment default risk include:

- Careful screening, from a credit standpoint, of prospective borrowers
- Ensuring loans are “properly collateralized” (i.e. over-collateralized)
- Routine monitoring (i.e. site visits) with larger accounts to discuss business conditions and to anticipate cash flow problems before they occur
- Collections policies ranging from wire transfers for larger, creditworthy borrowers to personal site visits to collect cash for smaller, less creditworthy borrowers

CURRENCY RISK

There are two main operative currency markets in Romania – one based upon the Romanian lei (ROL) and the other based upon the US dollar (USD). Generally, ROL interest rates are equal to the US dollar interest rate plus the difference between the Romanian inflation rate and US inflation. Hence, ROL interest rates are in the 50 – 60% range when Romanian inflation is running at 40% per annum. To avoid direct exposure to Romanian inflation risk, it is anticipated that loans will be made in USD with repayments made in either USD or ROL at the then prevailing USD/ROL exchange rate.

ENERGY PRICE AND ENERGY SAVINGS RISK

In Western-style performance lending, the lender frequently assumes the risk that the borrower has achieved both the forecasted energy savings and that the unit value of that energy saved is at least some minimum value. In the case of the term and ESCO loans described above, FUNDCO is taking *neither* risk. Rather, loan repayments would be structured based upon forecasted economic benefits to end users. Should those benefits not materialize, the end user would still be obliged to make scheduled loan repayments. At the same time, should savings be greater, the end user still makes the same loan repayment.
The facility management will be able to adapt technologies, project design and subsectors targeted if those risk are more than just transitory.

PERFORMANCE RISK (OF CONTRACTORS)

In the case of a term loan, the borrower (end user) arranges to have the project implemented; FUNDCO's role is limited in this regard. Therefore, the risk of non-performance of contractors is entirely borne by the borrower.
In the case of the ESCO loan, there is a possibility a dispute could arise between the ESCO and the end user. The guarantee from the ESCO in favor of FUNDCO is intended to mitigate this risk. However, this is of limited comfort because (a) the credit of the ESCO is likely to be limited, and (b) there is likely to be a difference of opinion among the ESCO and end user as to where fault lies. Hence, performance risk is a key issue in the ESCO loan and, to an even greater extent, in the performance loan. Ways to mitigate this risk include the following:

- Work only with reputable ESCOs with a proven track record and demonstrated abilities and resources
- Finance projects that are very straightforward and do not involve new technology or complicated modifications to process equipment that is difficult to install, operate and/or monitor
- Conduct extensive technical due diligence of the project and evaluate the ability to perform of both the ESCO as well as subcontractors and vendors
- Closely monitor the installation of the project
- Build in the ability to closely monitor the performance of the project, especially during the initial six months of operation.
- Establish a mechanism for the end user to alert both the ESCO and FUNDCO of any suspected problems or other issues long before a performance dispute arises. This might take the form of a required notice that must be given by the end user with adequate time for the

ESCO to remedy the problem before the end user is excused from his payment obligation. In this manner, if the ESCO cannot remedy the problem within some portion of the allotted time, FUNDCO would have the opportunity to take alternative arrangements to fix the deficiency.

INTEREST RATE RISK

As a general rule, loans will be made on the same basis (fixed or floating interest rate) as funds are made available to FUNDCO. In the case of the GEF grant funds, FUNDCO could offer fixed interest rate products without incurring interest rate risk. However, since a key objective is to attract funds from other sources (e.g. Romanian banks), it is contemplated only floating rate products will be initially offered.

KEY SUCCESS FACTORS

There are many factors key to the success of this program including:

- Alignment with GoR on the overall goals and objectives of the program, including the development of a commercially rational mechanism for managing events such as replacement of the manager, channeling new capital through GoR to the Foundation, and so on.
- Autonomy from political influence in the day-to-day operations of FUNDCO, including ready access to Foundation capital.
- Highly qualified and experienced FUNDCO management (with appropriate compensation plans), free of conflicts of interest.
- Highly qualified and experienced Investment Committee personnel, free of conflicts of interest.
- Strict adherence to rigorous policies and procedures relative to all management activities.
- Quality team of advisors and consultants to whom FUNDCO can cost-effectively outsource specific services.
- Provision of training as described.
- Standardization of processes and products to the maximum extent possible to minimize recurring costs.
- Flexibility to adapt business plan, including product offerings, to rapidly changing market conditions.

Annex 5

The Market for Energy Efficiency Investment in Romania

INTRODUCTION

In order to verify the market for the proposed Romania Energy Efficiency Financing Facility (EEFF), a detailed market assessment has begun to investigate the overall potential for energy efficiency investments in Romania, and more critically, the immediate market for investments.

Given the difficulty that Romania's economic transition is having on certain sectors of the economy, the market assessment has focused on what is understood to be the primary target beneficiary of the EEFF investments: those industries that can demonstrate creditworthiness and an ability to repay loans (or other financial products) that would be offered for efficiency improvements.

Additionally, particularly for the early years of EEFF operation, it is assumed that eligible projects would be limited to those meeting certain criteria to minimize risk and maximize the potential for success. These criteria include:

- The project must have a relatively short payback time (generally under three to four years);
- The investment should be in the range of US$ 50,000 to $800,000 (to minimize transaction costs on the low side, and to limit exposure from a limited number of projects on the high side);
- At least 50% of each project's benefits have to come from energy savings (e.g., process or capacity improvements that have ancillary energy savings benefits are not eligible); and,
- The technology must be well proven in the proposed application to avoid all technological risk.

Within these constraints, a review has been completed of the large quantity of feasibility studies prepared in Romania over the past several years, interviews with potential clients have begun, and initial estimates of the overall market size have been prepared and are summarized in this annex.

RATIONALE FOR INDUSTRY SECTORS AND TECHNOLOGIES SELECTED

While there is phenomenal potential for technically and economically justified energy efficiency improvements in virtually all sectors of the Romanian economy, several sectors and subsectors of the manufacturing industry are initially targeted for EEFF investments. These sectors were chosen due to their strong economic performance, level of export capacity (and the resulting hard currency income, removing currency risks), and growth potential. The candidate industries were further narrowed down by the combination of their energy savings potential, the potential for replication of projects, and having a substantial enough energy bill to warrant the minimum project size mentioned above.

It is important to note that the investment potential shown is actually in a very conservative subset of the industry sectors identified. For example, within the pulp and paper sector, we have not considered investments in pulping plants, which are struggling economically, but only considered the potential investments in some of the profitable, and growing, paper making facilities. We then only assumed replication potential in less than half of these plants to remain conservative in the estimate. Similarly, within the cement industry, we have only considered potential investment at the two most profitable plants, while there are many others that can use the technical improvements but may not have the required ability to repay.

The technologies identified are standard energy efficiency improvements that have been demonstrated to provide lasting, reliable savings in similar facilities around the world. All of the projects identified have proven savings potential, and have been found through detailed audits and feasibility studies to be applicable to sites in Romania.

OVERVIEW OF THE MARKET

The primary target market for the first five years of EEFF operation is shown in Table 1. The mix of industries and technologies shown represents low-risk investments for the early years of the EEFF, both with companies that should have adequate ability to repay loans, and with technologies that are well proven. Figures 1 and 2 show the breakdown of the estimated market by industry sector and technology.

Table 1: Estimated potential for commercially viable energy efficiency investment in the industrial sector (in US $)

	Boiler & Heat Distribution Retrofit			Boiler Replacement			Variable Speed Drives			New Air Compressors			Power Factor Correction		
		Energy Cost			Energy Cost			Energy Cost			Energy Cost			Energy Cost	
Industry Sector	Investment	Savings	Payback	Investment	Savings	Payback	Investment	Savings	Payback	Investment	Savings	Payback	Investment	Savings	Payback
Cement							$ 2,300,000	$ 1,335,000	1.72				$ 570,000	$ 326,000	1.75
Food & Beverage	$ 3,185,000	$ 759,000	4.20	$ 2,300,000	$ 969,000	2.37				$ 3,000,000	$ 770,000	3.90			
Glass & Fine Ceramics	$ -	$ -		$ 315,000	$ 96,000	3.28	$ 294,000	$ 234,000	1.26				$ 165,000	$ 67,200	2.46
Machine Building	$ 7,650,000	$ 2,482,000	3.08	$ 5,000,000	$ 2,680,000	1.87				$ 2,250,000	$ 470,000	4.79	$ 800,000	$ 635,000	1.26
Oil Processing							$ 564,000	$ 310,000	1.82						
Chemicals	$ -	$ -		$ 30,000,000	$ 8,000,000	3.75	$ 307,000	$ 250,000	1.23	$ -			$ 1,200,000	$ 330,000	3.64
Wood Processing	$ 1,700,000	$ 481,000	3.53	$ 1,650,000	$ 585,000	2.82				$ 4,680,000	$ 2,730,000	1.71	$ 1,800,000	$ 130,200	13.82
Pulp & Paper	$ 5,500,000	$ 2,400,000	2.29				$ 20,500,000	$ 3,335,000	6.15				$ 744,000	$ 112,800	6.60
Other							$ 5,000,000	$ 1,575,000	3.17						
Total	$ 18,035,000	$ 6,122,000	2.95	$ 39,265,000	$ 12,330,000	3.18	$ 28,965,000	$ 7,039,000	4.11	$ 9,930,000	$ 3,970,000	2.50	$ 5,279,000	$ 1,601,200	3.30

	Steam Traps			Energy Management & Controls			Process Modernization			Small Cogeneration/Turbines			Total		
		Energy Cost			Energy Cost			Energy Cost			Energy Cost			Energy Cost	
Industry Sector	Investment	Savings	Payback	Investment	Savings	Payback	Investment	Savings	Payback	Investment	Savings	Payback	**Investment**	**Savings**	**Payback**
Cement				$ 822,000	$ 1,807,000	0.45	$ 1,950,000	$ 514,000	3.79				$ 5,642,000	$ 3,982,000	1.42
Food & Beverage	$ 525,000	$ 900,000	0.58	$ 621,000	$ 219,000	2.84				650,000.00	130,000.00	5.00	$ 10,281,000	$ 3,747,000	2.74
Glass & Fine Ceramics				$ 142,500	$ 182,500	0.78	$ 6,600,000	$ 1,150,000	5.74	225,000.00	165,000.00	1.36	$ 7,741,500	$ 1,894,700	4.09
Machine Building	$ 1,200,000	$ 690,000	1.74	$ 472,000	$ 730,000	0.65							$ 17,372,000	$ 7,687,000	2.26
Oil Processing				$ 160,000	$ 224,000	0.71	$ 28,000,000	$ 5,460,000	5.13	15,000,000.00	4,280,000.00	3.50	$ 43,724,000	$ 10,274,000	4.26
Chemicals	$ -						$ -			17,472,000.00	3,619,100.00	4.83	$ 48,979,000	$ 12,199,100	4.01
Wood Processing							$ 32,000,000	$ 28,800,000	1.11				$ 41,830,000	$ 32,726,200	1.28
Pulp & Paper				$ 800,000	$ 1,220,000	0.66							$ 27,544,000	$ 7,067,800	3.90
Other	$ 317,000	$ 355,000	0.89	$ 640,000	$ 500,000	1.28							$ 5,957,000	$ 2,430,000	2.45
Total	$ 2,042,000	$ 1,945,000	1.05	$ 3,657,500	$ 4,882,500	0.75	$ 68,550,000	$ 35,924,000	1.91	$ 33,347,000	$ 8,194,100	4.07	$209,070,500	$ 82,007,800	2.55

Figure 1: Potential Investments by Industry Type

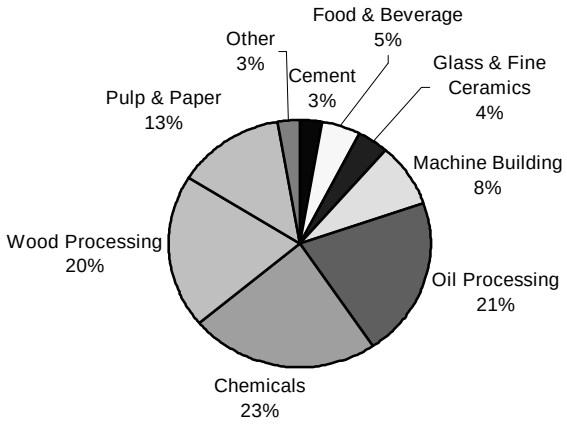
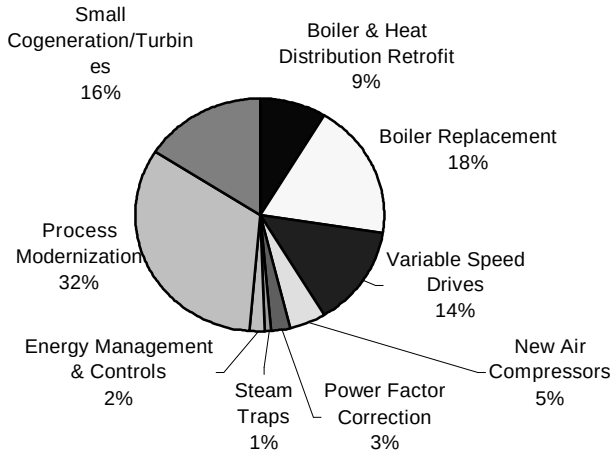


Figure 2: Potential Investments by Technology



INITIAL YEARS PROJECT PIPELINE

From the overall target market size, very short payback (less than two years, when considered as a package to a given customer) projects have been identified as key targets for the first two years of EEFF operation. It is considered key that the financing facility have many initial "winning" projects to demonstrate its success, and attract additional co-financing and more clients. As such, in the first one to two years, EEFF will focus on relatively short loans (one to two years), to ensure that in the beginning funds are rolled over quickly, and more projects can be funded. Table 2 shows the projected early pipeline projects.

Additional work is currently underway to confirm the savings and investment potential, and screen the creditworthiness of these projects to build the pipeline. However, this is a delicate balancing act in that many of the most attractive customers have been approached in the past about other energy efficiency financing schemes, and expected to have funds available through those other schemes that never materialized. Also, all investment decisions will be completely up to the selected EEFF manager, so no commitments to customers can be made during project preparation. With all of this in mind, the project preparation team is developing a set of "case studies" to demonstrate that the pipeline does exist, but without any commitment to the customers. The intent is to perform as much advance work as possible so that the EEFF manager can get a quick start, without tying their hands to projects that they may not want.

Table 2: Potential projects with short paybacks

Romania Energy Efficiency Markets Short Payback Projects								
	Number of Plants						Optimistic	Conservative
Industry	Optimistic	Conservat.	Technology	Investment	Savings	Payback	Total Inv	Total Inv
Cement	2	1	VSDs	772000	445000	1.73	$ 1,544,000	$ 772,000
	15	5	Boilerhouse Eff	1000	14000	0.07	$ 15,000	$ 5,000
	3	2	EMS/M&T	250000	183000	1.37	$ 750,000	$ 500,000
			Raw Mill Separator					
Aluminum			Modernization					
Glass & Ceramic	10	5	VSDs on Molding Machines	98000	78000	1.26	$ 980,000	$ 490,000
	4	2	Small Cogen	75000	55000	1.36	$ 300,000	$ 150,000
Pulp, Paper & Cardboard	12	6	Power Factor Correction	62000	94000	0.66	$ 744,000	$ 372,000
	10	6	Paper Machine Rehab	550000	242000	2.27	$ 5,500,000	$ 3,300,000
Food & Beverage								
Wood Processing	50	15	Air compressor replacement	90000	52500	1.71	$ 4,500,000	$ 1,350,000
			Retrofit Drying Chambers					
Oil Processing	6	3	VSDs	74000	34500	2.14	$ 444,000	$ 222,000
	6	3	Flue Gas Mon. & Control	40000	56000	0.71	$ 240,000	$ 120,000
Chemicals	12	5	VSDs	61500	50000	1.23	$ 738,000	$ 307,500
Machine Building	5	2	Power Factor Correction	60000	37000	1.62	$ 300,000	$ 120,000
	3	2	New Boiler House	500000	268000	1.87	$ 1,500,000	$ 1,000,000
Total							$ 17,555,000	$ 8,708,500

FURTHER POTENTIAL IN LATER YEARS OF OPERATION

While creditworthy industrial facilities have been targeted for EEFF's early years of operation due to the current economic situation in Romania, it is expected that other sectors will emerge as good candidates over the coming decade, and the market for energy efficiency investment will grow significantly. In particular, we anticipate that the growing commercial buildings sector (hotels and private offices) should be a strong market in the relatively near future.

Municipal and other public buildings and services should also be a very strong market during the second half of the coming decade. There are tremendous energy savings opportunities in municipal water and sewer systems, and public lighting systems as well. Additionally, schools and hospitals have very good potential. While all of these sectors are not currently considered good credit risks, their role in providing necessary public services means that they will remain in operation, and as the economic restructuring moves forward, will evolve into creditworthy entities.

Because of creditworthiness and repayment concerns regarding customers other than the industrial segments above, detailed market assessment potential has not yet been done for

the other sectors. Market assessment to date has focused on those projects that would be representative of projects forming the pipeline for the early years of EEFF's activities. Other technical assistance work has attempted to quantify the size of other markets, which are quite large and could be a significant part of EEFF's activity following the first few years. For example, extrapolating from recent PHARE work, conservatively there are US$ 250 to 400 million boiler and building envelope projects in schools alone with short payback (under 3 years). Substantial potential also exists in privately owned commercial buildings (hotels and offices), and other public facilities such as hospitals. Further work on quantifying this potential, and identifying potential creditworthy projects, will continue through project preparation.

Annex 6

Focal Point Endorsement Letter