

## PROJECT BRIEF

### 1. Identifiers

<b>Project Number:</b>	2619
<b>Project Title:</b>	<b>Financing Energy Efficiency and Renewable Energy Investments for Climate Change Mitigation</b>
<b>GEF Implementing Agency:</b>	United Nations Environment Programme (UNEP)
<b>Executing Agencies:</b>	United Nations Environment Programme (UNEP) United Nations Economic Commission for Europe (UNECE)
<b>Associated Financial Institutions:</b>	European Bank for Reconstruction and Development (EBRD) Groupe Caisse des Dépôts et Consignations (CDC) Swiss Reinsurance Co., Swiss Re, Greenhouse Gas Solutions
<b>Requesting Countries:</b>	Belarus, Bulgaria, Kazakhstan, Former Yugoslav Republic of Macedonia, Romania, Russian Federation, Serbia and Montenegro, Ukraine
<b>Eligibility:</b>	Belarus ratified UNFCCC on 11 May 2000 Bulgaria ratified UNFCCC on 12 May 1995 Kazakhstan ratified UNFCCC on 17 May 1995 Former Yugoslav Republic of Macedonia ratified UNFCCC on 28 January 1998 Romania ratified UNFCCC on 8 June 1994 Russian Federation ratified UNFCCC on 28 December 1994 Serbia and Montenegro ratified UNFCCC on 12 March 2001 Ukraine ratified UNFCCC on 13 May 1997
<b>GEF Focal Areas:</b>	Climate Change
<b>GEF Programming Framework:</b>	Operation Programme 5 – Removal of Barriers to Energy Efficiency and Energy Conservation Operation Programme 6 – Promoting the Adoption of Renewable Energy by Removing Barriers and Reducing Implementation Costs

### 2. Summary:

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This project is the result of a prolonged and concentrated effort undertaken by the UNECE over the last 15 years in Central and Eastern Europe to promote the rational use of energy and to reduce environmental air pollution. Various programmes have been launched during this period in the UNECE framework of Energy Efficiency 21 which have demonstrated that it is possible to finance energy efficiency investments in Eastern Europe that reduce GHG emissions. Financial institutions such as the World Bank, the EBRD and the Nordic Investment Bank (NIB) have played a key role in that respect. But they have also shown that this is a time consuming and labour intensive process that needs to become much more fluid or business-as-usual in order to succeed on any meaningful scale.

Therefore, this project is to promote the formation of an energy efficiency market in Eastern Europe and the CIS so that cost-effective investments can provide a self-financing method of reducing global greenhouse gas (GHG) emissions. It will assist participating countries to address the financial, technical and policy barriers to energy efficiency and renewable energy investments. The project will (a) establish a dedicated source of project finance –an Instrument Fund- with the participation of public and private sector investors; (b) enhance the skills of the private and public sector experts at the local level to identify, develop and submit bankable projects for financing to the fund and/or other sources of finance; (c) provide

assistance to municipal authorities and national administrations to introduce economic, institutional and regulatory reforms needed to support these investment projects.

The investment potential in Eastern Europe for energy efficiency projects with a payback period of less than five years is estimated to be between US\$ 5 and US\$ 10 billion. This investment volume is so large that the private sector needs to participate in financing such projects. The genuine participation of the private sector in turn will require the formation of a market that can provide opportunities for large investments to be made with low transaction costs that produce adequate returns at an acceptable risk within a reasonable period of time. Therefore, this project is designed to go largely beyond what has been done previously in the form of demonstration investments financed under special conditions in selected Eastern European locations. Its objective is the establishment of a dedicated financial facility, managed by a private experienced Fund Management company, linked to a pipeline of projects that can provide for the large scale participation of private sector investors in partnership with public entities. Based on the lessons learned from earlier financing mechanisms, the project will help leading private and public financial institutions to create a US\$ 250 million public-private equity Fund that can complement other financing schemes including current and planned GEF projects. In parallel to this, UNEP and UNECE will level the playing field by improving the local enabling environment. As a result, the project is expected to leverage an investment volume of up to US\$ 2 billion for energy efficiency and renewable energy projects. The outcome of the project will be solid investments that could represent a reduction of GHG emissions of 10 million tons of carbon per year, enhanced skills of local experts and policy reforms in participating countries. Hence direct carbon emissions reduction for this project stands at 200 million tons if we consider a 20 year period, according to GEF standards. Taking into account the possibility the Fund is replicated after demonstrating success, direct post project carbon emissions reduction can be estimated again at a 200 million tons level over a 20 year period. Finally, in terms of indirect emissions reduction, a conservative estimate based on the volume of most cost-effective energy efficiency investments, leads to a carbon reduction figure of 600 million tons over 20 years.

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### **3. Costs and Financing (US \$)**

<b>GEF:</b>	<b>Full Project:</b>	2.9 million
	Monitoring & Evaluation:	0.1 million
	<b>PDF B</b>	0.0 million
	<b>Subtotal GEF:</b>	<b>3.0 million</b>
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<b>Co-financing:</b>	<b>Full Project:</b>	
	Government of France (FFEM)	2.60 million
	Governments in the region (in kind)	1.40 million
	UN Foundation (UNF)	2.00 million
	European Business Congress (EBC)	0.26 million
	UNECE (in kind)	2.80 million
	<b>PDF</b>	
	UNEP (in kind)	0.020 million
	UNF/UNFIP	0.015 million
	UNECE (in kind)	0.100 million
	Government of France	0.065 million
	<b>Subtotal Co-financing:</b>	<b>9.260 million</b>
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<b>Total Project Cost:</b>		<b>12.26 million</b>
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<b>Leveraged Resources Expected of the Project:</b>		<b>250 million</b>

#### **4. Associated Financing (Million US \$)**

It should be noted that the support requested from GEF and other co-financing partners is not to be used in the Fund capital but only to support the technical assistance components of the proposed project: policy reforms, capacity building, pipeline identification and the design, structuring and fund-raising of the Fund, which will be undertaken by a selected highly qualified financial institution. In this framework, co-financing support has been fully approved by the United Nations Foundation (UNF), the United Nations Fund for International Partnerships (UNFIP), the French Ministry of Foreign Affairs (MAE) and the Fonds Français pour l'Environnement Mondial (FFEM) or French GEF (letters of commitment from the UNF and the FFEM are attached in Annex E), as well as other public and private organisations as described hereafter:

1. 'Financing Energy Efficiency Investments for Climate Change Mitigation' (ECE-INT-04-318) approval for US\$ 2 million funding by the United Nations Foundation and United Nations Fund for International Partnerships on 16 June 2004 in Geneva (Switzerland), co-financing to the present project.
2. 'Capacity Building and Support for the Establishment of a Dedicated Fund for Energy Efficiency in Eastern Europe' approval of Euro € 2 million (USD 2.6 million) by the Fonds Français pour l'Environnement Mondial (FFEM) French GEF on 30 March 2005, co-financing to the present project.
3. Host countries 'in kind' contributions will provide most personnel costs for the national supervision and the local implementation of project operations. This will also include the costs of experts taking part in project training courses for business planning and financial engineering to prepare investment project proposals. The facilities and personnel services provided on an 'in kind' basis for project operations are estimated to be approximately US\$ 25,000 for each country per year.
4. The UNECE secretariat will make an annual 'in kind' contribution of US\$ 400,000 of personnel, staff travel, offices, communications, conference services, interpretation, documents translation, reproduction and distribution.

In addition, the project has been accorded one parallel financing grant from an international industrial federation. This grant will provide additional resources to selected project activities that will be pursued jointly with relevant partners at the local and international levels: the European Business Congress (EBC) approved funding of US\$ 260,000 as a co-financing partner for the development of energy efficiency investments in selected participating countries including the Russian Federation.

#### **5. Operational Focal Point Endorsements**

1. Mr. Vasiliy Podolyako, Deputy Minister of Natural Resources and Environmental Protection, GEF Focal Point for Belarus, Ministry of Natural Resources and Environment, Belarus, 9 August 2004;
2. Ms. Fathme Iliaz, GEF Focal Point for Bulgaria, Ministry of Environment and Water, Bulgaria, 5 July 2004;
3. Ms Gordana Kozuharova, Head of Department for European Integration, GEF Operational Focal Point, Ministry of Environment and Physical Planning, Former Yugoslav Republic of Macedonia, 2 September 2004;
4. Ms. Liliana Bara, Secretary of State for European Integration, GEF Focal Point, Ministry of Environment, Romania, 8 July 2004;
5. Dr. Mirolsav Nikcevic, GEF Focal Point, Ministry Science and Environment Protection, Republic of Serbia, 12 July 2004;
6. Mr. Anatolii Hrytsenko, Deputy Minister, GEF Focal Point, Ministry of Environmental Protection, Ukraine, 28 October 2004.

7. Mr. Valentin Stepankov, Deputy Minister, GEF National Focal Point, Ministry of Natural Resources, Russian Federation, 01 September 2005.

8. Mr. S. Kesikbayev, Acting Minister, GEF Focal Point, Ministry of Environmental Protection, Kazakhstan, 27 May 2005.

**6. IA Contact:**

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## LIST OF ACRONYMS/ABBREVIATIONS

ARENA-ECO	Agency for Rational Energy Use and Ecology, Kiev, Ukraine
BEEF	Bulgarian Energy Efficiency Fund
CIS	Commonwealth of Independent States
CBA	Commonwealth Bank of Australia
CDC IXIS	Caisse des Dépôts et Consignations IXIS Financial Engineering
CEEF	Commercial Energy Efficiency Financing
DTIE	UNEP Department of Industry, Technology and Economics
EBC	European Business Congress
EBRD	European Bank for Reconstruction and Development
EE21	UNECE Energy Efficiency 21 programme
ECS	Energy and Communications Solutions LLC
EnEffect	Centre for Energy Efficiency, Sofia, Bulgaria
ENSI	Energy Saving International AS
ESCO	Energy Service Company
FEER	Financing Energy Efficiency in the Russian Federation
FFEM	Fonds Français pour l'Environnement Mondial (French GEF)
FREE	Foundation for Romanian Energy Efficiency
HEECP	Hungarian Energy Efficiency Co-financing Project
IEA	International Energy Agency, OECD
IFC	International Finance Corporation
IREED	UNECE Industrial Restructuring, Energy and Enterprise Development Division
MAE	French Ministry of Foreign Affairs
NC	National Coordinator
NCU	National Coordination Unit
NICE	Energy Saving Centre, Nizhny Novgorod, Russian Federation
NPI	National Participating Institution
PCU	Project Coordination Unit
PPP	Public Private Partnership
PVMTI	Photovoltaic Market Transformation Initiative
PSC	Project Steering Committee
REEF	Renewable Energy and Energy Efficiency Fund
RFI	Renaissance Finance (UK) Ltd.
SDG	Solar Development Group
SEEP	Serbia Energy Efficiency Project
SEFI	UNEP Sustainable Energy Finance Initiative
SPV	Special Purpose Vehicle
TCW	Trust Company of the West
UkrESCO	Ukraine Energy Service Company established by EBRD
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNF	United Nations Foundation
UNFIP	United Nations Fund for International Partnerships
UNOPS	United Nations Office of Project Services
USAID	United States Agency for International Development
USDOE	United States Department of Energy
USEPA	United States Environment Protection Agency

## TABLE OF CONTENTS

	Page No.
1. BACKGROUND AND CONTEXT	8
1.1 Background	8
1.2 Country Drivenness and Preparatory Process	9
1.3 Lessons Learned from Previous Financing Mechanisms	10
1.3.1 Types of Financing Mechanisms	10
1.3.2 Review of Some Project Finance Initiatives	11
1.3.3 Project Links with other GEF initiatives in Eastern Europe and the CIS	15
1.3.4 Conclusions for the Design of the Present Project	16
2. RATIONALE AND OBJECTIVES (ALTERNATIVE)	17
3. PROJECT ACTIVITIES/COMPONENTS AND EXPECTED RESULTS	19
3.1 Objective 1: Establish a Public Private Partnership Fund	19
3.1.1 Capital Commitments and Fund Size	19
3.1.2 Fund Investments	20
3.1.3 Fund Duration and Exit	21
3.1.4 Fund Returns	21
3.1.5 Fund Management	21
3.1.6 Activities Related to Objective 1	22
3.1.7 Outputs Expected of Objective 1	22
3.2 Objective 2: Develop Skills of Public and Private Sector Experts at the Local Level	22
3.2.1 Activities Related to Objective 2	23
3.2.2 Outputs Expected of Objective 2	23
3.3 Objective 3: Assist Municipalities and National Administrations to Introduce Reforms	23
3.3.1 Activities Related to Objective 3	23
3.3.2 Outputs Expected of Objective 3	24
3.4 Stakeholder Incorporation	24
3.5 Institutional Development and Human Capacity Building	25
3.5.1 Institutional Development	25
3.5.2 Human Capacity Building	25
4. RISKS AND SUSTAINABILITY	26
4.1 Economic	26
4.2 Technical	27
4.3 Political and Institutional	27
4.4 Social	27
5. STAKEHOLDER PARTICIPATION	28
5.1 Stakeholder Participation	28
5.2 Stakeholder Participation Strategy	29
6. IMPLEMENTATION ARRANGEMENTS	30
6.1 Implementing Agency	30
6.2 Executing Agency	30

6.3	Project Steering Committee	31
6.4	Project Management Unit	32
6.5	National Project Management / Coordination	33
6.6	Regional Project Management / Coordination	34
7.	INCREMENTAL COSTS AND PROJECT FINANCE	34
7.1	Incremental Costs	34
7.2	Project Financing	35
7.3	National Counterpart Contribution	37
8.	MONITORING, EVALUATION AND DISSEMINATION	37
8.1	Monitoring and Evaluation	37
8.2	United Nations Programme Performance Review	38
8.3	Global Environment Facility and UNEP	38
8.4	United Nations Foundation	38
8.5	Fonds Français pour l'Environnement Mondial	38
8.6	Dissemination of Project Results	39
ANNEXES		
Annex A.	Incremental Costs and Incremental Cost Matrix	40
Annex B.	Logical Framework Matrix	44
Annex C.	STAP Roster Technical Review	46
Annex D.	Letters of Endorsement	
Annex E.	Letters of Co-Financing Partners	
Annex F.	Letters of Interest of Fund Participants	
Annex G.	Economic Commission for Europe	
Annex H.	Responses to the GEF SEC Review	69
Annex I.	Response to World Bank Comments	73
TABLES		
	Examples of Energy Efficiency and Renewable Energy Financing Mechanisms	1
	Composition of the Project Steering Committee	24
	Project Financing by Co-financing Partner and Component	28
	UNECE and UNOPS Project Execution Support Costs	29
FIGURES		
	Figure 1. Structure of the Project and Execution Modalities	34

# PROJECT DESCRIPTION

## 1. BACKGROUND AND CONTEXT

### 1.1 BACKGROUND

Eastern Europe and the CIS suffer from severe economic and environmental problems caused by their inefficient and polluting energy systems. At the same time, some of the best opportunities for reducing global greenhouse gas (GHG) emissions will come from investments to improve energy efficiency in these countries. While the Eastern European economies are two to four times more energy intensive than the western market economies, the energy intensity of Eastern European and CIS economies increased sharply during the first decade of economic transition, although it is now well understood that efficient and reliable energy systems are essential for managing economic transition, enhancing environmental conditions and ensuring energy security.

Energy efficiency improvements as well as renewable energy investments are therefore badly needed, also because this is the only self-financing method of reducing GHG emissions in these countries. However, at present, financing energy efficiency or renewable energy in Eastern Europe is still a niche industry. Projects may have high internal rates of return, but do not capture the attention of investors or commercial banks because most projects are small and unfamiliar to local lending institutions. Even high IRRs cannot compensate for the high transaction costs banks incur to undertake the due diligence for small projects and to establish political, financial and institutional support for them. In addition, many experts in Eastern Europe know the technical fixes needed to improve energy efficiency in their municipalities, power stations or factories but they do not know how to formulate investment projects so that they meet banks rules, standards and criteria. Bearing in mind the lack of specific incentives in most of the targeted countries to introduce the relevant regulatory, policy and institutional reforms in the energy sector, all these barriers represent a forbidding environment for realising energy efficiency or renewable energy investments.

On the one hand, it has become clear that building technical and financial engineering skills, removing policy barriers and giving local stakeholders experience in financing investments are some of the key changes needed to actually achieve GHG emissions reductions on a large scale. In addition, providing a dedicated funding resource where both the public and private sectors can participate is a necessity in order to meet the huge capital needs that are required to achieve a real impact of the energy production and use patterns in these countries.

On the other hand, the substantial experience acquired during the last ten years has shown clearly that it is possible to identify, develop and finance energy efficiency and renewable energy investment projects in Eastern Europe. In addition, with energy market deregulation, further energy prices rises and reforms introduced in several countries, energy efficiency and renewable energy technologies as well as related services are beginning to become commercially attractive. Several key projects completed recently with the support of the international community had been designed to take advantage of these market conditions by providing capacity building and promoting policy reforms to support energy efficiency and renewable energy investments. But undoubtedly the major bottleneck is unavailability of project finance from dedicated financial instruments since commercial banks are still reluctant to apply project finance models to energy efficiency and renewable energy projects. In the absence of suitable investment vehicles, private banks and private sector investors remain hesitant to commit themselves to this type of project. As a result, under present conditions in Eastern Europe and the CIS, once the pre-feasibility study business plans have been prepared, finding finance for each project is a time consuming and expensive process. Therefore, linking an investment project pipeline to pre-approved and dedicated funds would be the best way, possibly the only way to make significant progress in this field.

As a result, the proposed project would address the three following barriers:

- Lack of awareness from the part of national government ministries and local authorities as well as from the private sector regarding energy efficiency and renewable energy issues, particularly from the perspective of creating a non-distorted energy market;
- Lack of expertise in preparing bankable proposals: this barrier has to be rapidly overcome in order to build a pipeline of projects that, in itself, would make the local financial institutions more confident that a market does exist and, as a result, make them more motivated to provide additional financing;
- Lack of a dedicated funding source, given that the capital requirements for significant emissions reductions in this region are so large that only a growing market for implementing energy efficiency technologies with private sector participation will really have an impact.

## **1.2 COUNTRY DRIVENESS AND PREPARATORY PROCESS**

Each of the project countries is committed to enhancing energy efficiency, developing human capacities, strengthening local communities and improving environmental quality. These features of government policies are cited in UNDP National Human Development Reports and in Country Strategy Notes. Improving energy efficiency to reduce greenhouse gas (GHG) emissions is a declared policy priority in the National Communications of Bulgaria (2002); Kazakhstan (1998); FYR Macedonia (2003); Romania (1998); Russian Federation (2003); Ukraine (1998). The present Project has been formulated with the views, guidance and assistance of States and NGO energy efficiency agencies in participating countries. These agencies have presented the project to national GEF Focal Points. The participants in this process include: Belarus State Committee for Energy Efficiency and Control; Bulgarian State Energy Efficiency Agency; Centre for Energy Efficiency EnEffect (Bulgaria); Energy Department, Ministry of Economy, Former Yugoslav Republic of Macedonia; Ministry of Industry, Energy and Trade, Kazakhstan; Ministry of Science, Industry and Technologies and Ministry of Energy, Russian Federation; Romanian Agency for Energy Conservation (ARCE), Ministry of Energy and Mining, Serbia and Montenegro; State Committee of Ukraine for Energy Conservation and Agency for Rational Energy Use and Ecology (ARENA-ECO).

The project proposal has been formulated with the experts from all participating countries in a series of intergovernmental meetings beginning in May 2003. The concept for this proposal followed the completion of earlier work on developing energy efficiency investment projects in selected participating countries under the UNECE Energy Efficiency 21 Project during the last three years (see Annex G for a description of UNECE and EE21 activities). The preparatory process began with a working meeting between country experts and financial experts to explore how a dedicated investment fund could be set up. This was structured at the Seminar on Financing Energy Efficiency Investments in Eastern Europe held on 26 May 2003 in Geneva in which participated key public and private financial institutions as well as energy experts: the European Bank for Reconstruction and Development, EBRD; Renaissance Finance International RFI UK Ltd.; US Department of Energy and US Agency for International Development (USAID); Energy Saving International ENSI representing the government of Norway; Energy Saving Centre NICE, Nizhny Novgorod, Russian Federation; Centre for Energy Efficiency EnEffect, Sofia, Bulgaria; State Committee for Energy Efficiency, Minsk, Belarus; World Bank Group/International Finance Corporation IFC; CDC IXIS Financial Engineering; Dexia Bank; TPF/UkrESCO; IMPAX; Energy Communications and Solutions LLC; and SwissRe (Swiss Reinsurance Company) Greenhouse Gas Solutions. As a result, seminar participants recommended that an investment fund be developed to which a pipeline of the countries present or future investment project proposals could be submitted.

An intergovernmental meeting of national experts held after the seminar requested the UNECE secretariat to prepare a complete proposal based on an agreed draft (ENERGY/WP.4/2003/4) for a new energy efficiency project targeting these countries and including the creation of a dedicated investment Fund for

submission to donors, co-financing partners and potential Fund investors (ENERGY/WP.4/2003/8). A third regional meeting was held on 24 to 26 May 2004 in Geneva to review the development of the present project proposal. The meeting welcomed the recommendation of the UNFIP Advisory Board to submit the proposal for funding to the United Nations Foundation in June 2004. The meeting also expressed appreciation to the French Ministry of Foreign Affairs, French Global Environment Facility (FFEM), the United States Environment Protection Agency (EPA) and the European Business Congress (EBC) for co-financing the project. Participants requested the preparation and submission of proposals to all these supporting institutions and to the GEF through UNEP. A fourth regional intergovernmental meeting of national experts was held on 29 June to 1 July 2005 to review progress on the present submission to the GEF, confirm commitments of donor institutions and participating countries as well as to consider possible future preparatory activities as required (ENERGY7WP.4/2005/5).

### **1.3 LESSONS LEARNED FROM PREVIOUS FINANCING MECHANISMS**

#### **1.3.1 Types of Financing Mechanisms**

The Baseline Scenarios of all Central and Eastern European energy efficiency projects submitted to the GEF Council identify the major bottleneck to increased investments as being the difficulty of raising project finance in these countries. This simply seems to confirm the conclusion that suitably designed dedicated financial instruments are essential for Eastern European energy consumers to invest in energy efficiency or renewable energy projects.

The present proposal is based on the lessons learned from previous initiatives. In order to analyse a meaningful sample of projects, the following section reviews initiatives undertaken in Central and Eastern Europe as well as in other regions of the world, including projects supported by the GEF and others funded by other donors. These projects launched as dedicated financial instruments have been implemented under various forms (grants, equity participation, credit lines and guarantees) but they are always nominally designated as “Funds”. It is therefore important to distinguish between two main categories:

- a large majority of these so-called funds, have been designed and set-up by and for the sole use of developed countries, particularly in Western Europe: usually based on public budgetary resources, these funds have been designed and managed under the state leadership, exclusively for the needs of the countries in which they were set up and are, therefore, very difficult to extrapolate to other contexts, all the more the information on the management issues and actual results are not easy to collect. In most cases, they have been used to subsidise energy efficiency or renewable energy projects through the allocation of direct grants or loans softened by the introduction of a grant portion. In rare cases, solutions such guarantee mechanisms have been tested, always based on public money made available. During the last ten years, public facilities of this sort have also been established in some economies in transition and, more rarely, in a few developing countries, often with the support of bilateral or multilateral donors;
- the second category is composed, on the contrary, of a few initiatives that have tried to closely associate the private sector to the establishment of the dedicated facility, targeting specifically energy efficiency or renewable energy investments. Most of these initiatives have been designed with the view of developing a financial mechanism adapted to the situation of economies in transition or developing countries.

#### **1.3.2 Review of Some Recent Project Finance Initiatives**

For the needs of the present proposal, a brief assessment of the following projects, pertaining to the second category described above, has been done in order to better understand their key features and draw lessons:

### Examples of Energy Efficiency and Renewable Energy Financing Mechanisms

Project	GEF Support	Status
Renewable and Energy Efficiency Fund (REEF)	Yes	Closed after failure, but recently restructured as a purely GEF financed fund
Solar Development Group (SDG)	Yes	Closed after failure
Photovoltaic Market Transformation Initiative (PVMTI)	Yes	Work in progress. GEF has approved an extension until December 2010
EBRD Energy Efficiency and Emissions Reduction Equity Fund (EBRD Fund)	No	Closing after full disbursement
Hungary Energy Efficiency Co-financing projects (HEECP 1 and 2)	Yes	Not fully disbursed yet
Africa Rural Energy Enterprise Development (AREED)	No	Seed investment activity ongoing in Africa, Brazil, China.
Commercial Energy Efficiency Financing (CEEF)	Yes	Similar to HEECP but targeting other countries. Work in progress.
Financing Energy Efficiency in the Russian Federation (FEER)	Yes	CEO endorsed
Romania Credit Line (FREE)	Yes	Work in progress
Bulgaria Credit Line (BEEF)	Yes	Not started yet
Serbia Energy Efficiency Project (SEEP)	Yes	Not started yet

Keeping in perspective GEF activities in the Climate Change focal area, targeting exclusively developing countries and economies in transition, one may then consider this list as being almost exhaustive since only a few other funds have actually been launched or announced during the last 5 or 6 years, but either with objectives and through mechanisms that were totally different from what is contemplated by the present proposal (for instance the various World Bank Carbon Funds; the Finn Fund established by Finland with Finnish tied resources); or through initiatives that sometimes include energy efficiency or renewable energy investments but within a scope which is in reality much broader (such as the AIG Infrastructure Fund for Eastern Europe) or as simple advertisements that have never materialised.

As part of the preparation of the present proposal, a review of all these projects mentioned in the above table has been carried out (based on the documentation available on the internet, or sometimes, on discussions with the consultants involved in the project) with a three-fold objective:

- try to understand whether or not, or to which extent, these initiatives had been successful and what lessons could be learned in this respect regarding the design of further projects aiming at setting up new financing mechanisms;
- analyse the nature of the proposed financial mechanism established in order to support energy efficiency and/or renewable energy investment, and compare with the one suggested in the framework of the present proposal;
- analyse the geographical scope of these initiatives and make sure no overlapping or contradicting approach would exist once the project subject of the present proposal is launched.

A short description of most of these projects, including some elements of analysis of their status, results and (expected) impact, is provided below, as part of a general analysis of the type of actions that have been undertaken so far, in the financial sphere. It is however interesting to point out immediately a first distinction to be made between energy efficiency projects (i.e. projects aiming at reducing the baseline energy consumption) and renewable energy projects (i.e. projects aiming at producing energy -most often electricity in developing countries- with other means than fossil fuels). Energy efficiency projects often correspond to a demand-side approach (usually at the end-users level) while renewable energy projects often correspond to a supply-side approach (at the energy producer or manufacturing industry levels). Combining these two approaches in the framework of a unique mechanism has then to be analysed carefully, since the financial and economic characteristics of these two kinds of projects are different. Among these key differences between energy efficiency and renewable energy projects, one is of particular relevance for the design of a promoting financial mechanism. It can be said on the one hand that energy efficiency technologies are today relatively well known and available (at least in the developed countries), at an affordable price, leading to energy efficiency investments with a reasonable payback time. However, most of these investments are small, as compared to the banks criteria, (although it is always possible to find, in the industrial sector particularly, some relatively large energy efficiency investments) and since these projects generate only savings that are difficult to capture (negative cash-flow), it is difficult to attract local banks interest for their financing. On the other hand, it is possible to find much larger investments in the renewable energy sector (particularly on-grid investments based on hydro, geothermal or wind resources) but the cost-effectiveness of such projects is much more difficult to demonstrate, taking into account the present costs of the technologies available and the fuel supply risk (with regard to the sustainability of the resource: drought, no wind periods, etc). In addition, when it comes to considering off-grid renewable energy projects, then the established financial mechanisms have to overcome the double barriers that result from investment costs that (i) are not affordable for a large part of the potential consumers and (ii) are still of a too small size for bank financing. The conclusion is that the Fund contemplated under the proposed project will define distinct implementation methods and use adapted skills for both approaches (See 3.1.2).

Another element to take into account is the exact nature of the contemplated financial mechanism. It should be borne in mind that using the word “Fund” may be misleading, since this word may qualify very different realities. For instance, from the table above, we can distinguish at least three types of Funds:

- Funds that only provide equity or quasi-equity: this implies that Special Purpose Vehicles that would be able to receive the equity participation are created (for example, a specific company established to implement and operate a wind farm or an ESCO set up as an intermediary to finance energy efficiency projects): REEF, SDG, EBRD initiatives belong to this category of equity funds which fundamental advantage is that they may involve the private sector as an investor;
- Funds which are just credit lines established with a donor grant (often the GEF), disbursed under the form of loans, usually at commercial conditions: FREE, BEEF, PVMTI and the SEEP are representative of this category;
- Funds that are also based (essentially, at least at the outset) on GEF grant funding, and are used as a guarantee for loans distributed by local banks for energy efficiency purposes: HEECP 1 and 2, CEEF and the newly endorsed FEER project in Russia illustrate this approach.

The following considerations regarding how the mentioned initiatives have been designed should by no way be regarded as a judgement: they only serve to highlight some key characteristics of these projects which will be taken into account for the design of the financial mechanism contemplated by this one. Without pretending to make an exhaustive analysis (which is not the goal of the present proposal), it can then be noted that:

- REEF has been so far the most remarkable success ever achieved in terms of raising private capital to set up a dedicated energy efficiency and renewable energy equity fund: however, the project failed, essentially because return expectations had been initially raised at a level that could not be met. This prevented the Fund Manager from identifying sub-projects that would have been able to meet the Fund's criteria. In addition, the world-wide scope of the Fund associated to the Fund Manager small size are probably also factors that played a negative role;
- Similar comments can be made about the Solar Development Fund (SDG/SDF) which focus was not clearly defined (all sizes and types of renewable energy projects, but with a focus on solar products) and too broad in terms of geographic approach. Again, the choice of a centralised management by a Europe based Fund Manager, which made it compulsory to use the services of local subcontractors bearing no responsibility and with no decision-making power, therefore leading to a lack of trust between the subcontractors and the local entrepreneurs, was questionable.
- PVMTI has highlighted the implementation difficulties of an approach exclusively directed to supporting one single technology in a few targeted countries (India, Morocco and Kenya) with potential but not yet an established market, due to its non-affordability for the majority of the local potential users (rural population). In addition, the slow and cumbersome process to close deals (long legal contracts and conditions for disbursement) was a major barrier to get entrepreneurs and local financial institutions motivated until the disbursement of the funds. Nevertheless, PVMTI has helped to create a market particularly in Morocco but has also shown the necessity to obtain the country's interest and support for the technology (case of Kenya), to set conditions that are realistic with the local market and to raise expectations at a level that can actually be met.
- FREE in Romania illustrates the problem that resides in establishing a dedicated credit line providing loans at conditions which are not very different than those offered by the local banks and without the involvement of intermediaries that would be able to identify and prepare the projects (engineering companies, auditors, ESCOs): as a result, three years after launching, the credit line is used at a very low rate and only a few small projects have been approved so far;
- HECCP 1 and 2 is a remarkable approach: as reported in the GEF Private Sector Review, this project is an innovative financial model established in order to provide loans guarantees. This facility has two components: it provides partial guarantees on a subordinated recovery basis to local banks for specified projects they would not dare to finance without additional comfort as well as technical assistance for building capacity in financial institutions and ESCOs. The guarantee facility's main objective is to expand availability of commercial financing for energy efficiency projects in Hungary and to build a sustainable lending market for energy efficiency investments. Only a few banks have participated in the scheme leading to a relatively small number of projects financed under the guarantee facility, mainly because the terms and conditions were not deemed attractive enough by the banks in regard of the constraints of the procedure. In addition, the choice of the country was questionable, since many other incentives from public local sources and international organizations (including the GEF: for instance the UNDP Public Sector Energy Efficiency Project) had also been introduced during the same period in Hungary and have all contributed, to some extent, to the increase in competition, bank appetite for energy efficiency projects, and openness to innovative

approaches. As a result, although there is no doubt HEECP has helped a few local banks in developing an internal knowledge regarding how to appraise an energy efficiency project on the basis of its cash-flows instead of relying on the borrower's balance sheet and requesting high co-laterals and down payments, the degree to which this has led to a new energy efficiency lending business in the country is difficult to estimate. This impact will have to be measured not just by the number of transactions directly guaranteed, but also by the assessment of whether financial institutions have become able to pick up on the guaranteed pilot loans and develop new business lines without need for further guarantees. In conclusion, it will be interesting to analyse the results of this innovative approach in other countries where it has been replicated under CEEF and more particularly in a more demanding environment such as Russia under FEER.

- Since 2000, UNEP has been working to scale up a Rural Energy Enterprise Development (REED) approach through a partnership involving the public purpose investor E+Co, the United Nations Foundation, the Blue Moon Foundation, SIDA and a diverse group of local enterprise development partners. The African programme, AREED, is the most advanced to date with debt investments in 25 sustainable energy enterprises in the countries of Senegal, Mali, Ghana, Tanzania and Zambia. These investments, ranging in scale from \$8,000 to \$175,000, have seeded businesses in the areas of solar crop drying, sawmill waste charcoal production, efficient cook stove manufacture, wind water pumping, solar water heating, LPG distribution and energy efficiency. Although the REED approach seems promising, it is unlikely to grow to any significant scale if linkages between the different stages of investment are not strengthened and commercial investment capital cannot be encouraged to more significantly participate at earlier stages of a sustainable energy enterprise's development. New approaches are needed that better link the seed capital approach to more mainstream energy investment activity.
- The UNEP led MEDREP has been so far a great achievement in terms of partnering with state utilities, financial institutions and suppliers. Although it is too early to estimate the success of the solar thermal projects developed in Morocco and Tunisia, MEDREP is focused geographically and in terms of technology to be developed. The flexibility of the donor is a major asset in the development of the projects and most of the funds is now committed. In both Tunisia and Morocco, the success of MEDREP projects is certainly due to the partnerships put together particularly with the state utilities which play a key role as intermediaries and the endorsement of the local government to the projects. In Tunisia, a loan facility was implemented to help local financial institutions build loan portfolio in the solar water heating. In Morocco, MEDREP is implementing a loan/leasing facility for solar water heating systems jointly with the state utility, to install collective SWH installations for around 100 hotels.
- The EBRD Energy Efficiency and Emissions Reduction Equity Investment Fund has been relatively successful so far. Although it is too early to estimate the capital returns, this private equity Fund initiated by the EBRD with the support of a large European bank and which raised Euro 71 million from private French and Japanese investors has worked satisfactorily. Most of the committed capital is now disbursed, certainly because its focus was appropriate: geographically, on a few countries only (essentially Hungary, Poland, Czech Republic, Slovakia) and in terms of projects, on energy efficiency investments (which is the major problem of these targeted countries) rather than on renewable energy projects. Its modus operandi has been very much the establishment of local ESCOs that were able to act as appropriate intermediaries while identifying and bundling relatively small projects which financing could be leveraged by local banks.

### **1.3.3 Project Links with other GEF initiatives in Eastern Europe and the CIS**

As previously mentioned, some of the GEF Implementing Agencies have already designed schemes aimed at supporting local banks in granting energy efficiency loans or developing other financing mechanisms. After careful review of the GEF pipeline, four such schemes targeting countries included in the scope of the present project have been recently designed and are listed in the table above. None of them envisage establishing a USD 250 million public private partnership (PPP) investment fund with significant private sector participation to operate in eight countries. They seek to address project finance raising mainly through partial credit guarantees and loans, each in a separate country with essentially GEF resources and local co-financing:

The **Bulgaria Energy Efficiency Project (BEEF)** is to support an increase in energy efficiency investments in Bulgaria through the development of a self-sustaining, market-based financing mechanism. The project's goal is focused on the development and implementation of financially profitable energy efficiency investment. GEF financing of some US\$10 million is to provide the seed capital for (BEEF) (US\$8.8 million) and to fund the TA component (US\$1.2 million). As BEEF seeks to make profit, investment financing and partial credit guarantees would be provided on commercial terms. The BEEF would be designed to attract a substantial amount of commercial co-financing (mostly by banks), in addition to a minimum of 20% contribution to project costs by the borrowers. It is to be noted in this regard the complementary role that might be also played by the EBRD Energy Efficiency credit lines to local banks, for on-lending purposes to local enterprises.

The **Foundation for Romanian Energy Efficiency (FREE)** has the same objective in Romania as the BEEF in Bulgaria. The project would achieve its goals 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 fund. This fund is in reality a line of credit provided by the GEF, which is intended to directly support the implementation of energy efficiency projects on fully commercial lending terms, demonstrating means to overcome current barriers and make profits through such projects.

The **Financing Energy Efficiency in the Russian Federation (FEER)** project is to build capacity in Russian financial institutions through the process of developing and marketing specialized energy efficiency finance products targeting appropriate market niches and financing energy efficiency projects as a direct result. The Program aims to establish sustainable lending practices in the Russian financial sector that support energy efficiency investment. The Program's focus on transactions is intended to support financial institutions such that they: a) understand that energy efficiency projects are viable investments that improve the financial stability of their clients and reduce the banks' overall risk exposure; b) examine industry related loans and leases from an energy efficiency perspective; c) actively build a portfolio of energy efficiency projects; and (d) develop specialized financial products which target niche markets for energy efficiency finance. IFC will employ contingent financing which uses GEF resources to leverage IFC and private capital. The project will provide partial guarantees, credit lines and related credit enhancement mechanisms to support the financing of energy efficiency projects, energy efficiency product manufacturers and energy efficiency service providers by domestic financial institutions. A Technical Assistance (TA) program is targeted at a range of key stakeholders in order to facilitate development of the energy efficiency market.

In addition to these projects, but with a completely different objective, one could also mention the Serbia Energy Efficiency Project for Serbia and Montenegro, which focus is on residential buildings and which includes the setting up of a Fund to be established by the Serbian Government.

#### **1.3.4 Conclusions for the Design of the Present Project**

It appears useful to provide here a few general comments that will justify the choices that have been made while designing the new proposal, as described in the following sections:

- Experience with the setting up of a fully-fledged private equity Fund dedicated to the financing of energy efficiency and renewable energy investments is relatively limited: only a few initiatives that have been developed during the last years can be documented so far (REEF, SDG, EBRD) and these do not constitute a sufficiently representative sample to fully enable to judge the relevance of the concept of an equity Investment Fund, all the more results are contrasted, from relative failure to estimated success;
- These initiatives however demonstrate the feasibility of attracting private investors to what is still perceived as a high-risk market. But the difficulties faced by some of the attempts may have had a negative impact on the financing and investors communities, which may have lost trust in the actual interest of these mechanisms. On the other hand, the worsening evolution of the world climate change situation is leading a number of key stakeholders in the private sector to adopt a more aggressive and bold attitude, provided the lessons of previous initiatives are transparently taken into account;
- Among these lessons, those of particular importance are as follows:
  - expectations for private investors in terms of returns should not be raised at a level that obviously could not be met. Although the recent (and maybe long term) increase of energy world prices make energy efficiency and renewable energy investments more and more competitive from a macro-economic perspective, this is not always translated in micro-economic terms in the present context of energy policies and domestic energy tariffs in the targeted countries. In other words, it is not reasonable to speculate on rapid high returns from this kind of investments. This leads to the idea that investors profile should be more the one of “patient” capital providers, ready to accept, at least in the short term, lower returns than those they might be accustomed to expect from other types of investments;
  - nevertheless, lower remuneration of the capital invested should be matched by a reduction of the perceived risk. It is therefore necessary to design a scheme that would allow shifting the risks away, at least partially, from the private sector to the public participants. This can be achieved, for instance, by buying down the cost of equity for the private investors. In reality, however, the risk for the investors in an Energy Efficiency and Renewable Energy Fund, lies less in the investments themselves which are now pretty well known, than in the absence of projects. The risk of poor quality of the projects the Fund will invest in still exists but can be very much mitigated by the demonstrated skills and experience of a carefully selected Fund Manager (which role is key, as indicated previously when analysing the cause for failures of some past projects) and by the setting up of internal bodies within the Fund (Investment Committee, Audit Committee) that would supervise the Fund Manager activity;
  - to address the issue of quick disbursement of the Fund in a number of good quality projects, accompanying measures have to be taken, even before the official launching of the Fund, in order to identify a pipeline of suitable proposals, susceptible to meet the Fund criteria, and to overcome the possible institutional difficulties or barriers that may still exist, from an administrative, regulatory or institutional perspective, in the targeted countries. In this regard, the focus should be on what is likely to be the most promising market, clearly the energy efficiency sector in Central and Eastern Europe, while leaving it open the possibility to include some good renewable energy projects when their cost-effectiveness can be ensured (for example, hydro, geothermal or biomass projects).
  - finally, the Fund structuring and design must result from a consensus among the investors: it will therefore not be the intention of UNEP or UNECE to define the Fund architecture and /or to manage it. On the contrary, the process will lead to give responsibility to a Lead Investor and to specialised financial institutions with proven experience in setting up this kind of financial mechanisms and in fund raising, while UNEP and UNECE will take an active part in managing the capacity building and technical assistance components.

The proposal described in the following sections incorporates all these elements of feedback as discussed above. In addition, it takes also into account the fact that in some of the countries in the region,

particularly Russia, Romania and Bulgaria, other GEF supported facilities are or will be established, as discussed in section 1.3.3. Although the approaches in these cases cannot be compared to the one contemplated by the present proposal which aims at developing a majority privately owned instrument, they are potentially highly complementary. As a matter of fact, the Fund envisioned in the present concept will provide equity and quasi-equity to special purpose vehicles (usually around one third of the total capital needs) and these entities will have, in all cases, to find on the local market the debt portion needed to finance the projects. That could possibly be achieved through the mechanisms set up in the framework of these three complementary projects, provided the total GEF support is maintained at a reasonable level, which will be easy to check through adapted guidelines. In particular, one of the main means contemplated by this proposal will be the setting up of ESCOs and other similar Special Purpose Vehicles, susceptible to bundle a large number of relatively small energy efficiency investments that might not be directly financed by banks: it is then obvious that these SPVs might be also supported with debt by the other GEF established facilities, when implemented, either directly or through the local partner banks.

## **2. RATIONALE AND OBJECTIVES (ALTERNATIVE)**

Given this background and analysis of previous initiatives, the present project will strive to complement the various initiatives mentioned above in some of the targeted countries, while providing a first financing source in those countries where these initiatives have not take place so far. As already emphasized, this project draws on lessons from previous funds and mechanisms set up by the European Bank for Reconstruction and Development (EBRD) and DEXIA or the International Finance Corporation (IFC) among others, including also the newly created Carbon Fund set up by Caisse des Dépôts et Consignations, Fortis Bank and DEXIA. Therefore, some of these institutions are anticipated to participate in the project as far as Objective One described below is concerned, as a participant in the Fund and/or in its design (see EBRD letter of intent in Annex F).

The objective then is to deve

lop a US\$ 250 million dedicated Investment Fund under a public-private partnership, meaning that the Fund would attract and be constituted through capital commitments made by investors from both the public sector (from the targeted countries as well as from other interested countries) and the international private sector, in a proportion to be further analysed during the Fund preparation, but presently estimated around 65% private and 35% public. The status of the capital commitments would be different for the public and the private portion, since it is expected the public part will play a mitigation risk role vis-à-vis the private part, this role being also further refined under Objective One of this proposal. The contemplated public-private Investment Fund will provide equity or quasi-equity to project sponsors directly through the creation of Special Purpose Vehicles or indirectly through the setting up of Energy Service Companies (ESCOs) that would be able to bundle small energy efficiency projects together in the framework of Energy Performance Contracts (EPCs).

The Equity Investment Fund proposed under this proposal would be a dedicated instrument to provide finance for (a) investments that have been already prepared during the previous phases of UNECE programmes Energy Efficiency 2000 and Energy Efficiency 21 (EE21) and therefore constitute a well-defined initial projects pipeline and (b) for new investments that will be identified during the present project as a result of Objectives 2 and 3. Most of the projects that have already been identified during the previous phases of Energy Efficiency 2000 unfortunately could not be funded until now, precisely because of the lack of an appropriate financing mechanism that imposed an inefficient case-by-case approach towards the financial institutions. This pipeline will have to be reviewed and updated by the Fund Manager who will also need to identify new energy efficiency and renewable energy projects in accordance with the Fund's pre-established eligibility criteria, to complement this initial pipeline. The Fund structure is described more fully in the section on Project Activities below.

The project is designed to have three objectives as follows:

**Objective 1:** Establish a public- private partnership fund in four steps:

- (a) **Structure and prepare the investment fund** under the leadership of a Lead Private Investor including establishing the investment objectives, investment structures, commercial success criteria, sub-projects eligibility criteria, conditions, exclusions and restrictions, hurdle rate, expected returns, exit strategy, coverage by sector and geographical coverage, potential fund size, market, management structure and costs, etc.
- (b) **Analyse the financial, legal and fiscal issues** including the capital structure and all necessary legal arrangements with investors;
- (c) **Solicit public sector entities** from both the targeted countries and other western countries as well as private sector investor participation, on the basis of an investment memorandum to be prepared as part of the activity and;
- (d) **Select an experienced fund manager** through internationally approved procurement procedures.

**Objective 2:** Develop the skills of the public and private sector experts at the local level to identify, design and submit bankable projects for financing to the Fund Manager.

**Objective 3:** Raise the general awareness regarding energy efficiency and renewable energy and provide assistance to municipal authorities and national administrations to introduce economic, institutional and regulatory reforms needed to support the investment proposals developed in the framework of the project.

### 3. PROJECT ACTIVITIES/COMPONENTS AND EXPECTED RESULTS

The project will undertake three types of technical activities, each one related to an Objective. These are for the design and start-up of the investment fund under Objective One; the preparation and technical appraisal of energy efficiency investment project proposals under Objective Two and the advisory services which will include technical assistance under Objective Three. The main features of the technical activities are summarised below.

**Investment Fund Design and Start-Up** will involve initially the preparation of an investment memorandum under the responsibility of a Lead Investor to be sent out towards potentially interested public and private investors and describing in depth the Fund's features and characteristics as well as the legal and fiscal modalities for investors to enable them to make commitments to the Fund. This will be followed by a consultative process through meetings and investor seminars to advertise the Fund and discuss the key issues related to its establishment with the potential investors. This task will be supervised by a reputable financial engineering company with a proven track record in developing such financial mechanism and approaches. Technical activities will be completed by preparation of the terms of reference for the selection of a Fund Manager and the organisation of an international tender for engagement of the Fund Manager.

**Preparation and technical appraisal of investments** is a process beginning with agreements with the Fund Manager and Fund investors on the investment selection criteria, especially the technical performance of projects that can generate acceptable internal rates of return (IRR) and meet carbon emissions reduction targets. These criteria will be disseminated to national teams and become part of the project identification and selection procedures developed during the technical and financial sessions of adapted training courses. Once candidate investment proposals have been identified, they will be prepared in three phases: technical development, financial engineering and submission/negotiation to the Fund Manager and/ or other sources of financing. International technical experts will assist local project

participants in the technical preparation of proposals and work with them on the evaluation of the projects for clearance and reformulation for approval.

**Advisory Services:** the project will provide technical assistance through printed and electronic publications to inform experts, policy makers within city administrations, local authorities, energy utilities and national ministries about the policy reforms needed to introduce energy efficiency and renewable energy investments. This aspect continues the broad policy reform and market formation activities of earlier work in this field. New studies will be undertaken and a broad analysis linked to case studies will be directly related to a series of specific investment project proposals. The specificity of the studies provides the value added in which policy makers at different levels can be shown what direct social, environmental and financial benefits will be forthcoming from a specific project or series of projects given that particular policy reforms are made. These may be economic, financial, energy pricing and tariff structure, institutional or comparatively simple administrative reforms. But they are often necessary changes for economically attractive and pre-feasibility study business plans to become bankable projects, which can be financed by the investment Fund.

As a result, the project activities will provide an opportunity for investors to participate in energy efficiency projects through a professionally managed Investment Fund established within the framework of the project; develop the skills of the private and public sectors at the local level to identify, develop and implement energy efficiency and renewable energy investment projects; and provide assistance to municipal authorities and national administrations to introduce economic, institutional and regulatory reforms needed to support these investment projects.

### **3.1 OBJECTIVE 1: ESTABLISH A PUBLIC PRIVATE PARTNERSHIP FUND**

The proposed Fund will be established as a public-private partnership, which means that capital investors in the Fund will come from both the public sector and the private sector. It is the aim of the project and of the present submission to the GEF to fully determine who are the investors and how the Fund will be actually structured and run. However, based on the preliminary discussions that have already taken place during the preparatory phase of this project, a few basis principles can be delineated as follows:

#### **3.1.1 Capital Commitments and Fund Size**

During the preliminary assessment phase, EE21 has received letters of commitment (see Annex F) from various institutions proposing to create a Fund ranging between US\$ 100 million to US\$ 250 million. It is therefore targeted to set up a first closing for the Fund at the level of US\$ 100 million, with further possible closings until reaching the final objective of US\$ 250 million. The objective is that the first closing would occur at the latest nine months after the dissemination of the official Investment Memorandum describing the general terms and conditions of the Fund, so that the Fund can actually start its activities, while the final closing would occur no later than one year after this first closing has taken place. In order to make this Fund sufficiently attractive to private sector investors, it is intended to mitigate the risks for the private sector through a contribution of the public sector representing around 35% of the total capital commitments. This public participation is expected to come from the governments of the targeted countries in the region where the Fund will operate, as well as from governments from OECD countries or other possible donors **but not from the GEF**. This public investment in the Fund will not be considered as grants or subsidies: when the Fund will exit from its investments (see below), these capital commitments will be recovered by the public investors as it would be the case of the private investors, the difference being that they may, in conditions explained in section 3.1.4, simply yield a return lower than the one allocated to the private investors. This would contribute to reduce the risk of these private investors, in order to provide them an incentive to commit to the Fund.

As previously mentioned, various private financial institutions have already made proposals to invest in this Fund at a significant level (more than US\$ 10 million) including:

- SwissRe, Greenhouse Gas Risk Solutions;
- Conning Asset Management;
- TCW Energy and Infrastructure Group;
- Commonwealth Bank of Australia;
- Caisse des Dépôts et Consignations leading a consortium of European banks including Group San Paolo, Bayerische Landesbank and Caixa Geral de Depositos.

In addition, the European Bank for Reconstruction and Development (EBRD) has also sent a letter expressing its interest in possibly becoming an investor in the Fund (see Annex F).

During the fund raising phase, other potential investors will be sought, from the financial sector with which UNEP has established a strategic partnership through the UNEP-FI and the SEFI programmes and from the industrial sector, particularly in the energy and utilities area. It is clear that this fund-raising phase is a very sensitive one and that no guarantee can be given that it will be successful. The risk of failure is however mitigated, given the precedents of REEF and the EBRD Funds that were both able to attract significant volumes of private investment. In addition, the intensive preparatory work with key potential investors such as Swiss Re indicates that there is now a growing appetite from the private sector for these types of mechanism, provided they can be made comfortable on the management issues.

### **3.1.2 Fund Investments**

The Fund will invest exclusively in energy efficiency and renewable energy projects that have a quantifiable impact on the reduction of greenhouse gas emissions and that are located in the eight targeted countries: Belarus, Bulgaria, Kazakhstan, Former Yugoslav Republic of Macedonia, Romania, Russian Federation, Serbia and Montenegro and Ukraine. A list of eligibility criteria will be established to further determine which kind of projects will be deemed acceptable and under which conditions and/or restrictions. It is expected that the fund will be able to provide equity and quasi-equity financing for setting up project companies and Special Purpose Vehicles (SPV) particularly in the case of on-grid renewable energy projects as well as Energy Service Companies (ESCOs) particularly for dealing with small scale energy efficiency investments. The conditions and limitations under which these instruments will have to be used will also be further defined during the course of project operations and will result in an Investment Memorandum to be agreed on by all investors in the Fund that will describe, inter alia:

- the technical nature of the sought investment and/or the technologies eligible to the Fund in both the energy efficiency and renewable energy fields (for example: co-generation, tri-generation, boilers refurbishment, district heating rehabilitation, street lighting renovation, biomass boilers, mini-hydro equipment, etc);
- the restrictions and limitations the investors and the Implementing Agency will want to introduce in establishing criteria for the Fund (for example: no intervention in companies producing tobacco or weapons, no more than X% in one single country or no more than Y% in one single investment, co-financing requirements and modalities, compliance with GEF policies and COP guidance, etc);
- the Fund's internal regulations, procedures and bodies (Board of Directors, Investment Committee, Policy Committee, co-financing rights and duties, etc);
- legal and fiscal issues for the investors.

### **3.1.3 Fund Duration and Exit**

Given that an important pipeline of projects has been established in previous phases of the EE21 program and that a number of bankable proposals have been prepared, it is anticipated that the Investment Period (the time during which the Fund will invest all its aggregated capital commitments) will not exceed four years from the official closing date. It is then anticipated that the Fund will be able to exit from its investments (by selling its shares or through any other predetermined means) after three to four years, bringing the total Fund duration to around seven or eight years. It should be noted that the envisaged structure is not a revolving fund: once capital is committed, the returns on investments are obtained in the form of dividends or at the exit date and cannot be reinvested, unless the Board of Directors decides otherwise.

### **3.1.4 Fund Returns**

As previously indicated and as in any other investment fund, the proposed Fund will make its returns from the dividends received on its shares in the projects it has invested in and from the profit made at the exit time through the selling of these shares. It is one of the key tasks of the Fund Manager to build the contractual arrangements when investing in a project so that the selling of the shares at an appropriate time can be realised in the best possible conditions. It is well known however that although energy efficiency and renewable energy projects may be cost-effective, they have often difficulties in yielding the same level of returns which private investors are accustomed to obtaining from investments in other sectors because of the range of technologies available, energy pricing policies and tariff structures. This is why it is anticipated that, as an incentive for the participation of private sector institutions, the status accorded to the public and private capital commitments will be different. While the final scheme is to be defined in detail and approved by the various public and private targeted investors, it will be based on the following principles:

- If the global fund return is above a certain threshold, public and private investors will receive the same level of returns in proportion to their commitments;
- If the global fund return is below various predetermined thresholds, the public investor's returns will be reduced accordingly so that the private sector share can reasonably be increased and thus its risk mitigated.

### **3.1.5 Fund Management**

The Fund will be managed by an experienced Fund Manager that will be hired through an international tendering process, on the basis of terms of reference and selection criteria that will be established during the project, under Objective One. In general the Fund Manager will:

- Supervise the fund raising phase;
- Prepare all legal documentation regarding the establishment of the Fund and the investors capital commitments;
- Prepare the Fund's guidelines and procedures, as well as the investments eligibility criteria for Fund's Board approval;
- Identify the possible investments, make all necessary technical and financial due diligence, negotiate with sponsors, partners, technology suppliers and possible co-financiers and prepare the projects submissions to the Fund's internal bodies such as the Investment Committee and the Policy and Strategy Committee;
- Prepare all necessary legal and fiscal documentation and agreements for signing by the Board with support of a legal and fiscal advisor (see 3.1.6), implement and monitor these projects;
- Report to the Board of Directors of the Fund;
- Organise the Fund exit from the projects in the best possible conditions.

The Fund Manager will receive an annual remuneration to be negotiated, paid by the Fund. As an incentive to produce good results, the Fund Manager also usually receives a portion of the actual Fund returns, the carried interest.

### 3.1.6 Activities Related to Objective 1

Activities related to Objective 1 will include:

- (a) The preparation of an Investment Memorandum under the responsibility of a Lead Investor to be sent out towards all potentially interested public and private investors and describing in depth the Fund's features and characteristics as well as the legal and fiscal modalities for investors to enable them to make commitments to the Fund;
- (b) The organisation of meetings and workshops in various places in OECD countries as well as in the targeted region to advertise the Fund, discuss the key issues related to its establishment with the potential investors and alter if needed accordingly the proposed structure to meet the specific needs or requirements of the key investors;
- (c) The selection of a reputable legal and fiscal advisor susceptible to establish the Fund in the most transparent and cost effective conditions, in an acceptable fiscal location meeting international rules and standards, and to prepare all necessary legal agreements between the Fund and its investors as well as between the Fund and its investment companies;
- (d) The preparation of the terms of reference for the selection of a Fund Manager and the organisation of an international tender.

### 3.1.7 Outputs Expected of Objective 1

- (a) **An Investment Memorandum:** a document legally enforceable to be printed and broadly disseminated among the financial and investors community,
- (b) **Investor Seminars:** presentations and workshops to describe and discuss the main characteristics of the proposed Fund;
- (c) **An Energy Efficiency Investment Fund:** establishment of a public private partnership Investment Fund to provide US\$ 250 million of equity or quasi equity to project sponsors;
- (d) **The selection of an experienced Fund Manager**

## 3.2 OBJECTIVE 2: DEVELOP THE SKILLS OF THE PUBLIC AND PRIVATE SECTOR EXPERTS AT THE LOCAL LEVEL TO IDENTIFY, DESIGN AND SUBMIT BANKABLE PROJECTS FOR FINANCING TO THE FUND MANAGER.

This objective is to prepare a substantial pipeline of possible investments in the energy and renewable energy sectors which meet the eligibility criteria established by the Fund and representing an investment volume of at least US\$ 2 billion in the eight participating countries.

### 3.2.1 Activities Related to Objective 2

- (a) Creation of country teams through a selection process to be defined of local experts suited to the task and design of specialised training sessions as well as the necessary communication and pedagogic tools and material, with the view of making the local participants able to prepare energy efficiency or renewable energy bankable proposals
- (b) Selection of the trainers and organisation of the training sessions in all the targeted countries

- (c) Collection of data related to the investment projects identified by the local experts and drafting as part of the training of the proposals in a format that would be satisfactory to the Fund and to other co-financing institutions.

### 3.2.2 Outputs Expected of Objective 2

- (a) **Investment Project Development Standards:** preparation of multilingual (English, French, Russian) terms, definitions, units of measurement and templates suitable for project selection and standard presentation of energy efficiency and/or renewable energy investments developed within the framework of the project with details of total project cost, investment requirements, internal rates of return, CO2 emissions reductions, etc.
- (b) **A network of energy efficiency managers in participating countries:** Local teams in each country trained and linked by Internet for communications, information transfer and distance learning;
- (c) **Trained experts in project development, finance, business planning:** at least 250 energy managers, energy auditors, consultants and commercial bank managers trained during adapted training courses of 2 sessions each including Internet assisted learning;
- (d) **Investment project pipeline:** economic and technical clearance by expert teams of energy efficiency and/or renewable energy investment projects from the project training courses and the National Participating Institutions for submission to the Investment Fund.

### 3.3 OBJECTIVE 3: RAISE THE GENERAL AWARENESS REGARDING ENERGY EFFICIENCY AND RENEWABLE ENERGY AND PROVIDE ASSISTANCE TO MUNICIPAL AUTHORITIES AND NATIONAL ADMINISTRATIONS TO INTRODUCE ECONOMIC, INSTITUTIONAL AND REGULATORY REFORMS NEEDED TO SUPPORT THE INVESTMENT PROPOSALS DEVELOPED IN THE FRAMEWORK OF THE PROJECT.

#### 3.3.1 Activities Related to Objective 3

- (a) Identification of the gaps in terms of energy efficiency and renewable energy awareness and organisation of training sessions at local levels;
- (b) Analysis of the local energy related institutional framework and identification of the possible barriers to energy efficiency or renewable energy developments, as well as concrete reforms to undertake;
- (c) Organisation of seminars at decision-makers level allowing the presentation and an in-depth assessment of the proposed reforms as well as the necessary means to be made available in order to enforce these reforms;
- (d) Organisation of missions in the field by international experts to assist municipalities and central administrations in the implementation of the suggested reforms.

#### 3.3.2 Outputs Expected of Objective 3

- (a) **Economic, Institutional and Regulatory Reforms:** A broad analysis of policy reforms needed to promote energy efficiency and renewable energy investments, reduce fuel poverty including case studies of individual projects or classes of projects based on at least 3 workshops with international and local experts;
- (b) **Energy Efficiency and Renewable Energy Strategy:** Senior decision makers from participating countries to examine needed policy reforms and to promote a sound business environment through ad hoc official seminars;

- (c) **Policy Advisory Services:** Series of recommendations reports by international experts to advise city administrations, local authorities and national ministries on reforms to support energy efficiency investment projects.

### 3.4 STAKEHOLDER INCORPORATION

The project stakeholders and beneficiaries include a wide range of consumers, groups and agencies in South-Eastern Europe, Eastern Europe and the CIS which should experience financial and non-financial benefits over the life of the proposed project and beyond from the implementation of the sub-projects, dissemination and replication of the successful experience of project outputs. These groups include:

- Industrial and commercial sector consumers
- Households and apartment building occupants
- City and regions administrations
- Municipal energy management teams
- Hospital and health care managers
- District heating utility managers
- Commercial banks
- Investment project managers
- National ministries
- Non-governmental organisations

Based on a series of successfully financed investments by the project's Investment Fund, national and international companies and banks will be more inclined to enter new markets for energy efficiency products, services and investments. At the same time, national ministries and administrations will have additional support for implementing energy efficiency strategies from local experience and will benefit from targeted information on how other countries have developed energy conservation laws, standards and regulations. The groups previously mentioned have been consulted on the orientation of the project through meetings of the UNECE in the framework of the Energy Efficiency 21 Programme. Local communities in Eastern European cities have repeatedly expressed the need for enhanced communications, skills and policy reforms to develop and implement energy efficiency investment projects. Representatives of these groups have also expressed the need for this work to the UNECE Committee on Sustainable Energy, UNECE Committee on Environmental Policy, the Environment for Europe process, the Commonwealth of Independent States Inter-State Economic Committee and other international meetings.

## **3.5 INSTITUTIONAL DEVELOPMENT AND HUMAN CAPACITY BUILDING**

### **3.5.1 Institutional Development**

During recent Institutional development activities of Energy Efficiency 21, a series of studies have been produced on policy reforms needed to promote market formation and support energy efficiency investment project development including:

- Guide for the Promotion of Energy Conservation Regulations in Economies in Transition (ECE Energy Series 16 - 2000)
- Energy Efficiency and Energy Security in the CIS (ECE Energy Series 17 - 2001)
- East West Energy Efficiency Standards and Labels (ECE Energy Series 18 – 2001 CD-Rom e-Book)
- New Energy Security Threats (ECE Energy Series 19 – 2003 CD-Rom)
- Carbon Emissions Trading Handbook (ECE Energy Series 20 – 2003 CD-Rom e-Book)
- Reforming Energy Pricing and Subsidies (ECE Energy Series 21 – 2003)
- Experience of International Organizations in Promoting Energy Efficiency in Belarus (ECE Energy Series 22 – 2004), Bulgaria (ECE Energy Series 23 – 2004), Kazakhstan (ECE Energy Series 24 – 2004), Russian Federation (ECE Energy Series 25 – 2004), Ukraine (ECE Energy Series 26– 2004)
- Energy Efficiency Policies and Measures in Europe (ECE Energy Series 27 – 2004 CD-Rom)
- Financing Energy Efficiency and Climate Change: A guide for Investors in Belarus, Bulgaria, Kazakhstan, Russian Federation and Ukraine (ECE Energy Series 28 – 2004 CD-Rom).

A wide range of techniques have been used to produce these studies: negotiations through multilateral expert groups; mixed national and international expert teams; international consultant and contractor reports and surveys, seminars and symposia. All these tools and existing instruments will be used in the framework of the present project while new complementary studies will be carried out on a case by case basis in the various countries, depending on the local conditions and obstacles identified for the financing of energy efficiency and renewable energy projects.

### **3.5.2 Human Capacity Building**

During the last three years, some 150 energy efficiency managers have been trained in courses on business planning and financial engineering under the Energy Efficiency 21 Project. These training courses have established a level of expertise, which will be developed more deeply and applied more broadly during the present project. Recent experience has shown that trainees from earlier courses can serve as trainers subsequently. For example, the energy efficiency experts trained in EE21 financial engineering courses from Nizhny Novgorod (Russian Federation) that developed and successfully obtained financing from the World Bank for energy efficiency projects, served as trainers for EE21 courses given in Kazakhstan during 2001-2002.

The proposed project will use this type of experience to amplify impact of recent results. The training courses and network development will be oriented to:

- Promote the skills of recently trained experts to serve as trainers for experts from their own and neighbouring countries;
- Increase the coverage of training and capacity building to include more municipalities in additional participating countries;
- Identify and train experts to work directly with the Fund Manager of the Investment Fund;

- Develop training courses that deal with a wider range of climate change mitigation technologies including renewable sources of energy and energy efficiency, on both the demand and the supply side;

#### 4. RISKS AND SUSTAINABILITY

The project will demonstrate that the concept of an energy efficiency and renewable energy investment equity fund is a financially sustainable opportunity for public and private sector investors. In order to do this, it will show that a series of cost-effective investment projects can be financed by the Fund so that investors will be interested in participating in this Fund and subsequently in other similar investment fund initiatives. Initially, some public sector resources (aside from the GEF or other co-financiers requested contribution) will be used to provide a risk reduction buffer for private sector investors. The Fund will focus on projects that meet criteria established by both the UNEP/ GEF and the Fund investors. Projects with internal rates of return (IRR) set at a reasonable level and an acceptable level of risk will be a priority for the Fund Manager. The Fund will target projects that significantly reduce GHG emissions and can be replicated. As a result, the Investment Fund itself could also be repeated at much lower cost if it proves successful.

The basic concept is that the Fund investments will be highly leveraged, in the first place because other equity contributions from co-investors will be sought and, secondly, because additional financing will come under the form of loans from local banks or international financial institutions. From this standpoint, the facilities established in countries like Romania, Bulgaria or Russia with GEF support will possibly be used, when and if this will not be considered as duplicating GEF financing for the same investment. This risk is however very much mitigated considering GEF support to this project will not be directed to the Fund itself, but just to its design. In addition, individual investment projects will be sustainable after the completion of the project since they will continue to achieve savings after investments have been repaid.

##### 4.1 ECONOMIC

The economic upturn that the proposed participating countries have experienced during the last few years with sharply rising GDP growth<sup>1</sup>, falling interest rates and the continuing rise of foreign direct investments have established a positive economic setting for the proposed project. In addition, persistently high oil prices are another important incentive for increased investments in energy efficiency and renewable energy sources. Assuming there is no overall disruption of investment climate in Eastern Europe and the CIS, economic risks should be very low. Nevertheless, several features of the project should diminish this still further. Risk mitigation measures will include promoting supportive government policies, diversification of the project portfolio and targeting a selection of energy efficiency investments on projects that will enhance productivity. Energy efficiency is a declared policy priority cited in the UNDP National Human Development Reports and in Country Strategy Notes for Bulgaria, Kazakhstan, FYR Macedonia, Romania, Russian Federation and the Ukraine. The project will seek to reinforce these measures through the adjustment of energy prices to reflect the costs of production in line with World Bank policy recommendations and earlier UNECE work on reforming energy prices and subsidies<sup>2</sup>.

There is a risk that the project will not attract adequate investor interest or public sector participation. This risk is significantly diminished by the initial interest expressed by key investors to participate in the fund as described in the letters from large potential investors (see Annex F). Much more significant commitments are expected when project operations begin since this will include an intensive fund raising

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<sup>1</sup> Percentage changes in real GDP 2003-2004: Belarus 10.0, Bulgaria 5.5, Kazakhstan 9.3, Former Yugoslav Republic of Macedonia 2.5, Romania 7.5, Russian Federation 6.8, Serbia and Montenegro 7.0 and Ukraine 12.4. Source: UNECE and National Statistical Offices.

<sup>2</sup> See 'Reforming Energy Pricing and Subsidies', ECE Energy Series No. 21, UNECE, United Nations New York and Geneva 2003.

phase. Similarly, another risk to consider is that the project could fail to develop a sufficient volume of bankable energy efficiency and renewable energy projects as has been the case for the Renewable Energy and Energy Efficiency Fund (REEF) and the Solar Development Group (SDG). This risk is also mitigated by the pipeline of pre-feasibility investment project proposals developed in an earlier phase of Energy Efficiency 21 and by the focus on economies in transition countries where the energy efficiency potential is huge.

## **4.2 TECHNICAL**

The technology risks of energy efficiency and renewable energy investment projects are very low. Indeed the related technologies are well known in both eastern and western countries. The inappropriate choice of technology and its improper use upon installation are the only risks that could reduce projected energy savings and affect potential greenhouse gas emissions reductions. But the careful specification of technology to particular applications and proper project oversight should eliminate risks related to technical choices. Similarly, training and technical assistance on energy management and maintenance regimes should ensure that energy saving targets are met. Indeed, the use of Energy Service Companies (ESCOs) to develop and implement investment projects would mitigate risks further since energy savings are guaranteed under performance-based energy service contracts.

## **4.3 POLITICAL AND INSTITUTIONAL**

While the economic, policy and legal framework in each beneficiary country from national ministries has to become more enabling, project implementation is aimed at the local level to help establish successful precedents for national policy and international treaty obligations. This should mitigate to some degree the effect of national political and economic instability. It should also reduce the risk of policy inertia and vested interests of utilities as obstacles to reforms. The multilateral character of the project with participating Eastern European and CIS countries will also reduce risks. Should the investment climate for energy efficiency projects become too risky in a particular country, the project can focus more heavily on market formation activities such as capacity building and institution strengthening in that location while using its network of communications and contacts to disseminate progress from other locations.

## **4.4 SOCIAL**

The social risks of the project are low because of strong stakeholder support. Indeed, the range of beneficiaries will widen as barriers to energy efficiency improvements are reduced and incentives are put in place. The social support for the success of the project is closely related to the self-interest of stakeholders and beneficiaries. Bankable projects will be developed to address beneficiary community needs including, for example:

- environment, climate change and sustainable energy issues will be addressed by projects which reduce air borne trans-boundary pollutants SO<sub>x</sub>, NO<sub>x</sub>, particulates and CO<sub>2</sub> for local populations and in other countries;
- child health will be advanced by improving the efficiency of hospitals and other child health care facilities to produce budget savings and additional purchasing power to expand facilities or provide enhanced health care products and services;
- preventive health will be advanced by projects that use innovative approaches to improving energy efficiency involving public awareness campaigns, by reducing energy costs and improving the health conditions in public housing;
- institutional strengthening of city administration and their energy management teams will be advanced by projects that help overcome the energy non-payment crisis, create jobs in retro-fitting energy-wasteful buildings and industry or in new industries producing energy efficient products.

Internet communications will improve the information flow between stakeholders, beneficiaries and local teams with international experts. These teams will assist municipalities and industries in developing energy efficiency projects, advise on related policy reforms needed to support them and seek finance for proposed investments from the Fund and co-financing sources.

## **5. STAKEHOLDER PARTICIPATION**

### **5.1 STAKEHOLDER PARTICIPATION**

The deployment of energy efficiency and renewable energy technologies requires the commitment and contribution of a wide range of stakeholders. It also means that use of these technologies can result in an equally wide array of direct and indirect beneficiaries. This project recognises and incorporates the interests of consumers, municipal administrators, energy managers, health care workers, energy utility managers, commercial banks, national energy policy administrators and parliamentarians. Some stakeholders will improve their basic knowledge from (i) training courses to enhance their financial engineering skills, (ii) workshops on policy reforms, (iii) the review of energy policy reforms, (iv) the presentation of case studies analysing specific barriers to financing economically attractive projects and (v) from a selection of energy efficiency and renewable energy investment projects financed by the Fund. Others will directly benefit from lower fuel bills and additional purchasing power for other priorities. National ministries will have additional support and demonstrable results for the sustainable energy policy priorities. Parliamentarians will have case studies related to specific investments to serve as the basis for revisions to energy conservation laws, standards and regulations. National and international companies and banks will be more inclined to enter new markets for energy efficiency products, services and investments earlier than they otherwise would.

### **5.2 STAKEHOLDER PARTICIPATION STRATEGY**

The project is designed to provide for the direct contribution of stakeholders who will also benefit from project activities and outputs. Their participation will be through the Project Steering Committee, policy workshops, seminars, energy policy review, case studies, training courses and in the preparation of investment project proposals that may be financed by the Fund. They may serve directly as National Coordinators, within National Coordination Units, implement specific project activities or participate in project events. The role and participation of the main stakeholders are given below.

- *Industrial and commercial sector consumers:* experts from selected industries and businesses will participate in training courses to prepare investment project proposals while others will attend case-study workshops benefiting from capacity building, investment projects and policy reforms. They would work directly with National Coordination Units (NCU) in each country to implement specific project activities.
- *City and regions administrations:* selected local authorities will take part directly in project activities including hosting workshops and developing energy efficiency and renewable projects while others will be informed by national ministries of the results. The local teams will work directly with the NCU and their views, requirements and results will be represented by the National Coordinators at the Project Steering Committee meetings.
- *Municipal energy management teams:* will take part in training courses and benefit from enhanced skills. Their direct counterparts will be with the NCU but they will also have working relations with training course instructors and international experts who will provide technical and financial clearance of their investment project proposals.
- *Hospital and health care managers:* selected hospitals will participate in the development of investment projects, benefiting from the enhanced skills of their energy manager, institutional

reforms, slower fuel bills and additional purchasing power for other priorities. Local managers may also participate in the preparation of the case studies to identify specific barriers to financing energy efficiency projects based on proposals they have formulated. They will work directly with local and international experts, reporting to the NCU.

- *District heating and electricity and gas utility managers*: direct participants will benefit from enhanced skills acquired in training courses, information workshops and investment projects, if financed. Local energy utility managers will be especially involved in the policy reforms related to specific projects since the non-payment and barter payment crisis involves them directly.
- *Commercial banks*: selected managers that take part in the project will benefit from increased capacities to evaluate investment project proposals while others will benefit from project information dissemination. Greater experience in project finance offered by this project will allow commercial bank managers to consider applying such practices more commonly during and after the investment period of the Fund.
- *National ministries*: will participate in the Project Steering Committee and have additional support from all project outputs for implementing energy efficiency strategies from local experience.
- *Parliamentarians*: will participate in international seminars and benefit from targeted information on how other Eastern European and CIS countries have developed energy conservation laws, standards and regulations as well as case studies for specific investment projects related to national policy reforms.
- *National and international companies and banks*: will be more inclined to enter new markets for energy efficiency products, services and investments earlier than they otherwise would.

## **6. IMPLEMENTATION ARRANGEMENTS**

### **6.1 IMPLEMENTING AGENCY**

The Implementing Agency for the Project will be the United Nations Environment Programme (UNEP) Division of Technology, Industry and Economics (DTIE). UNEP/DTIE has significant experience in assisting government and private sector decision makers on clean energy issues in developing countries and Eastern European economies in transition. In particular, it has focussed on integration of environmental and social costs of energy production, management and use. It works with a broad spectrum of partners including industrial federations, financial institutions, non-governmental organisations and the private sector. Together with the UNEP Sustainable Energy Finance Initiative (SEFI), the UNEP/DTIE has a proven track record in energy efficiency and project finance related issues as well as a long experience of Eastern European countries. Indeed, it is currently reinforcing its capabilities and skills relevant to the scope of the project, with new staff members joining its existing team to consolidate its institutional capacity in this field.

As the Implementing Agency, UNEP will have overall responsibility for the implementation of the project. UNEP/DTIE will be responsible for the scientific project oversight, co-ordination with other GEF projects (particularly those designed by other IAs and developing energy efficiency related financial mechanisms in countries belonging to the targeted group) and internal reporting to the GEF Secretariat on progress of the project. In addition, UNEP will be responsible for reporting the carbon emissions reductions resulting from project activities to national registries and/or international inventories.

### **6.2 EXECUTING AGENCY**

The project will be executed by the United Nations Economic Commission for Europe (UNECE), Committee on Sustainable Energy, Energy Efficiency 21 (EE21) programme. The European Bank for Reconstruction and Development (EBRD) will provide advisory support in relation to Objective One as

part of the activities of the Energy Efficiency Working Group established between the EBRD and UNEP/DTIE.

The Committee on Sustainable Energy is one of seven UNECE Committees: its work programme covers the liberalisation of energy markets, energy security, energy reserves classification systems, pricing policy reforms, energy efficiency and renewable for the 54 UNECE member states in Eastern Europe, the CIS, Western Europe and North America. Launched in 1991 by the Ministerial Conference on Sustainable Development in the UNECE Region held in Bergen (Norway), EE21 is one of the major programmes of this Committee on Sustainable Energy. It is implemented through governmentally appointed National Participating Institutions such as government and NGO energy efficiency agencies in 32 UNECE member states. It is supported by the UN regular budget and by an extra-budgetary trust fund with financial contributions from government departments, the private sector and foundations. The EE21 includes the participation and advice of bilateral aid agencies, international organisations and international financial institutions. An elected Bureau composed of a Chairman and five Vice Chairmen guides the execution of the EE21 work programme. During the last three years, Energy Efficiency 21 has launched or completed six sub-regional projects that each brought together a selection of interested member states, donors and international institutions.

### 6.3 PROJECT STEERING COMMITTEE

As a sub-regional project of Energy Efficiency 21, ‘Financing Energy Efficiency and Renewable Energy Investment for Climate Change Mitigation’ will be executed under the direction of an ad hoc Project Steering Committee (PSC) comprising National Coordinators (NC) who are representatives of National Participating Institutions (NPI) appointed by the Governments of the eight countries targeted by the Project. The Steering Committee will include representatives of UNEP and UNECE as well as the co-financing partners and representatives of International Financial Institutions active in the region (EBRD, World Bank, IFC, NIB, Black Sea Development Bank, EIB, Council of Europe Development Bank, etc). Similarly, the UNDP European Regional Office in Bratislava (Slovakia) and the UNDP Resident Representatives in the proposed countries have been contacted concerning their participation in the project and in the PSC. Monitoring and evaluation advisers will also participate in the PSC biannual meetings as observers. The PSC will elect a Chairman and a Vice Chairman on a rotating basis. The decision-making and guidance of the project will be executed in accordance with the participation and procedures of the Project Document as approved by all co-financing partners. The PSC will normally meet twice per year in Geneva in the Palais des Nations with complete conference services in English, French and Russian languages although additional ad hoc sessions may be convened as warranted.

The composition or national representation on the Project Steering Committee will involve the formal nomination of all participants by their Government or institution. The National Coordinators and the National Participating Institutions are nominated by Governments in accordance with terms of reference included in the Project Document. National Participating Institutions provide the national coordination of project operations, serve as the host to the National Coordination Unit (NCU) and contribute ‘in-kind’ resources to support project activities (see National Project Management and Figure 1 below).

#### **Possible Composition of the Project Steering Committee**

<i>Chairman:</i>	Elected by the PSC on a rotating basis
<i>Supporting Institutions:</i>	GEF UNEP/DTIE United Nations Foundation, UN Fund for International Partnership (UNF/UNFIP) Ministry of Foreign Affairs, Fonds Français pour l’Environnement Mondial (MAE/FFEM)
<i>Vice Chairmen:</i>	Elected by the PSC on a rotating basis
<i>Participating Countries:</i>	Belarus, Bulgaria, Kazakhstan, Former Yugoslav Republic of Macedonia,

<i>National Coordinators:</i>	Romania, Russian Federation, Serbia and Montenegro, Ukraine
<i>National Participating Instituti:</i>	Mr. Lev Dubovik, Chairman, State Committee on Energy Saving (Belarus)
	Mr. Kolio Kolev, Director, Energy Efficiency Agency (Bulgaria)
	Mr. Zdravko Genchev, Executive Director, Centre for Energy Efficiency EnEffect (Bulgaria)
	Mr. K. Suleymenov, Ministry of Energy, Industry and Trade (Kazakhstan)
	Ms. Violeta Keckaravska, Adviser to the Minister of Energy, Ministry of Economy (Former Yugoslav Republic of Macedonia)
	Mr. Sergey Mikhailov, Ministry of Energy, (Russian Federation)
	Mr. Corneliu Rotaru, Romanian Agency for Energy Conservation ARCE Ministry of Industry and Trade (Romania)
	Mr. Boris Reutov, Ministry of Industry, Science & Technology (Russia Federation)
	Mr. Miroslav Kukobat, Senior Adviser, Federal Ministry of Economy, Serbia and Montenegro
	Mr. S. Mihailenko, Chairman, State Committee on Energy Conservation (Ukraine)
	Mr. Mykola Rapsun, President, Agency for the Rational Use of Energy ARENA-ECO (Ukraine)
<i>Monitoring &amp; Evaluation Advisers:</i>	Each supporting institution will assign a monitoring and evaluation adviser to assist the PSC.
	GEF UNEP/DTIE: To be nominated
	UNF/UNFIP: Mr. Glen Skovholt
	MAE/FFEM: To be nominated
<i>Relevant International Projects</i>	Representatives of relevant international programmes and/or International Financial Institutions.

The Steering Committee will also comprise representatives of relevant international projects including those supported by the GEF and bilateral donors that may be synergetic to the present project.

#### **6.4 PROJECT MANAGEMENT UNIT**

A Project Management Unit (PMU) will be established for the execution of all activities and delivery of outputs in accordance with the timetable, budget and specifications set out in the Project Document. It will be responsible for servicing the Project Steering Committee, organising its meetings, preparing documentation and reports as required. It will organise the tasks in relation with the design and the setting-up of the Investment Fund and coordinate closely with the Lead Investor and the Fund Manager under Objective 1. The PMU will work closely with National Coordinators and NCU in each country to implement capacity development and technical assistance activities under Objective 2 and the policy and institutional reforms under Objective 3.

At the level of activity foreseen for the duration of the project, the PMU will be staffed by one Senior ECE staff member (P.5) (half-time) on the UN regular budget; one Regional Adviser on Energy (L.5) (half-time) on the UN regular budget; one energy economist (L.5) responsible for investment project finance and policy reforms with extra budgetary support; one energy economist (P.4) (full-time) on the UN regular budget and one secretary (G.5) (half-time) on the UN regular budget. The regular staff energy economist (P-4) will provide expertise on energy conservation policy matters, energy efficiency norms and standards especially in relation to the UNECE Committee on Sustainable Energy and Committee on Environmental Policy. The PMU will be subject to audit by the United Nations Board of External Auditors and the Internal Audit Division of the United Nations. Engagement of personnel and procurement of supplies or equipment financed from extra budgetary funds are subject to the regulations, rules, policies and procedures of the Organisation. The UNECE secretariat will make an annual 'in kind' contribution of

US\$ 400,000 of personnel described above, staff travel, offices, communications, conference services, interpretation, documents translation, reproduction and distribution. All expenditures will respect the terms and conditions of General Assembly Resolutions 1373 (2001) and 1526 (2004). Disbursements from any contribution to the project from United States sources will adhere strictly to Executive Order 13224 of 25 September 2001.

To the extent possible, the project will be executed with the assistance of the United Nations of Project Services (UNOPS) under existing Memoranda of Understanding (MOU) between UNOPS and UNFIP or through an MOU between UNOPS and the United Nations Office at Geneva (UNOG) which is responsible for the financial administration of UNECE executed programmes and projects. The UNOPS offices in Geneva and New York have been consulted on the present project proposal and are willing to support project activities through both its regional and country offices in the Europe and the CIS.

## **6.5 NATIONAL PROJECT MANAGEMENT / COORDINATION**

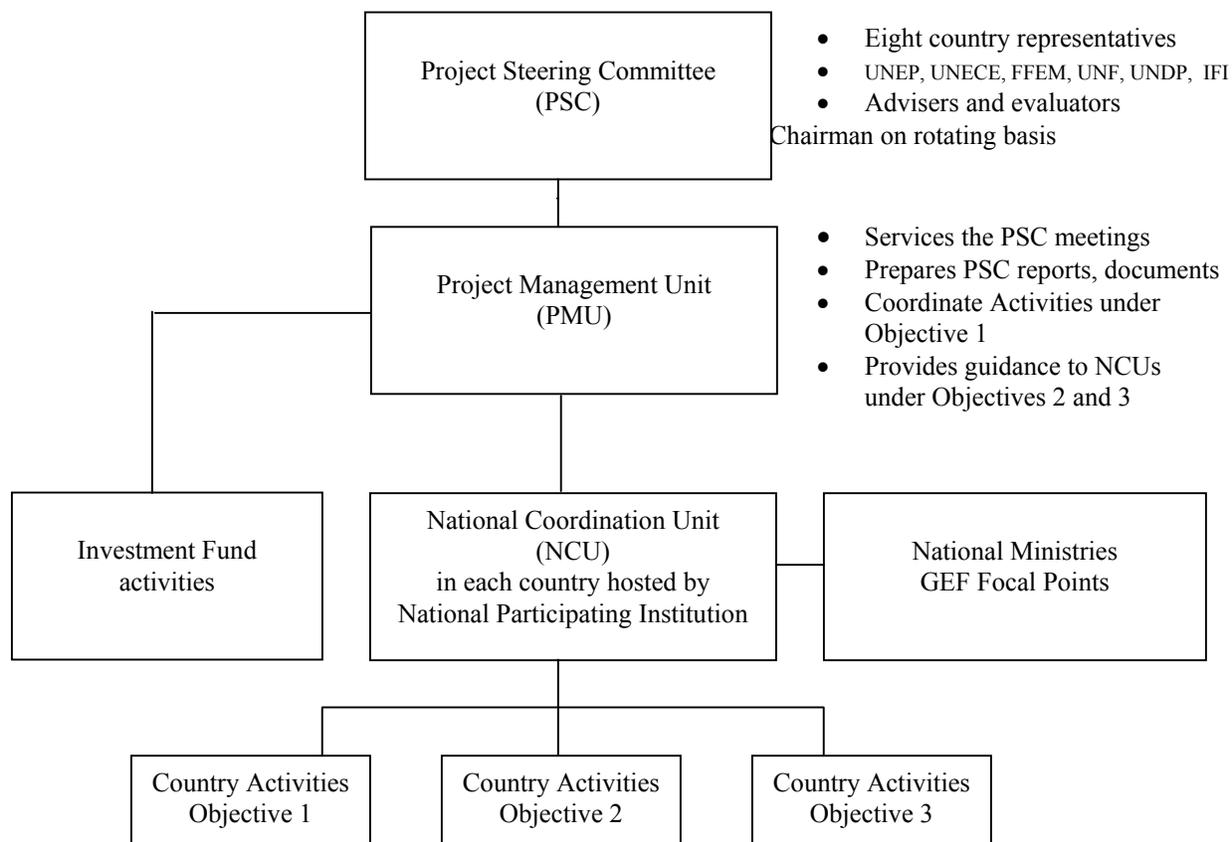
The project management structure and coordination effort of each country will be established by the national government ministry or agency responsible for implementing sustainable energy policies. In consultation with the relevant GEF Focal Point, government of each participating country will appoint a National Coordinator (NC), normally a senior representative of the country's National Participating Institution (NPI). The NPI is a government Ministry, agency or professional non-governmental organisation assigned the responsibility for international sustainable energy and climate change mitigation projects.

National Participating Institutions:

- serve as the host institution for a National Coordination Unit (NCU) which provides the national coordination of project operations;
- maintain international co-ordination with the PCU located with the UNECE secretariat in Geneva and with the NCUs in other participating countries;
- provide national level coordination with local offices of UNDP and/or UNOPS;
- maintain local coordination with the managers of relevant international projects and financing mechanisms including projects supported by the GEF, EBRD, World Bank, IFC, European Commission, USAID, USEPA and bilateral programmes.
- identify municipalities and industrial plants to participate in investment project development activities;
- serves as the webmaster, either directly or through sub-contract, for the project network of national and international counterparts;
- work with the PCU and international counterparts to organise project training courses, workshops, and seminars;
- provide information, data and assistance for the preparation of the regional energy efficiency policy review, project case studies and the identification of barriers to the implementation of investment projects;
- disseminate the results of project activities through local language publications, Internet posting of relevant project materials, radio and television broadcasts;
- contribute 'in-kind' resources to support project activities (see Project Financing below).

The NPI will ensure close coordination and follow-up on policy analyses by providing the information or documentation needed to implement local policy, administrative, regulatory or institutional reforms that support energy efficiency investment projects. This will include assistance in the preparation of international seminars for senior decision makers and/or parliamentarians in the framework of the project.

**Figure 1: Structure of the Project and Execution Modalities**



## 6.6 REGIONAL PROJECT MANAGEMENT/ COORDINATION

Project management and co-ordination at the regional level will be carried out by the PMU to ensure co-ordination among participating countries and with other programmes and development efforts. The biannual sessions of the Steering Committee will provide guidance and disseminate information to representatives of governments, the private sector and NGOs from UNECE member states in Eastern Europe and the CIS. The National Coordinating Units and the Project Steering Committee will maintain close coordination with the relevant international projects and financing mechanisms established in the region, including projects supported by the GEF, EBRD, World Bank, IFC, European Commission, EIB, USAID, USEPA and bilateral programmes. In particular a permanent working relationship is to be established with the other relevant GEF initiatives in the region (FREE, BEEF, FEER, etc.) on the basis of the contacts already taken with the various concerned tasks managers: as an example, it has already been agreed that the BEEF Fund Manager will serve on the Project Steering Committee. Similar initiatives have been taken vis-à-vis UNDP regional offices and representatives.

## 7. INCREMENTAL COSTS AND PROJECT FINANCE

### 7.1 INCREMENTAL COSTS

This project is designed to remove key barriers to energy efficiency and energy conservation in eight Eastern European and CIS countries with economies in transition. As a result, it seeks to achieve the objectives of GEF Operational Programmes 5 and 6 in reducing greenhouse gas emissions. The costs of the proposed alternative are larger than the baseline project, i.e. the resources that would be allocated to this activity by UNECE and the countries of the region. The support of the GEF and co-financing partners

is the incremental cost of the project in which the GEF has a minority share. The main innovations of this project are the establishment of a public-private equity fund linked to a pipeline of bankable investment project proposals developed by local experts and supported by government policy reforms.

The GEF, UNF and FFEM support for the Fund and pipeline of projects will reduce transaction costs, absorb the Fund start-up costs, reduce the time needed to raise the Fund and to invest funds into specific projects, improve the conditions local banks will be able to provide in terms of reduced spread on the interest rate and/or the percentage of collaterals or securities required by making them more familiar with project financing techniques in this particular field and encourage private sector investors by reducing the risk through the proposed structure of the Fund. By complementing other financing schemes, including current and planned GEF projects, the US\$ 250 million public-private equity Fund could leverage an investment volume of up to US\$ 2 billion for energy efficiency and renewable energy projects. The outcome of the project will be solid investments that could represent a reduction of GHG emissions of 10 million tons of carbon per year, enhanced skills of experts and policy reforms in participating countries.

It is unlikely that the project activities would take place in the absence of the GEF, UN Foundation and FFEM support. But the objectives of the project are essential to make progress in reducing the barriers to energy efficiency and conservation in the countries concerned. These efficiency improvements are essential, in turn, for reducing GHG emissions. The incremental costs for the design and start-up of a public-private equity fund, in particular, are essential for this financing mechanism to be established at all. The support from GEF, UNF/UNFIP and the FFEM will reduce the initial expenses related to the creation of the Fund and consequently increase its expected returns which will constitute an incentive for private investors to participate. It will also lead to reducing the transaction costs of the financing of individual projects. While specific projects will be cost-effective and self-financing from energy savings in their own right, the Fund will help to ensure that a significant number of carbon emissions reduction projects are implemented. More details of the incremental costs are given in Annex A.

## 7.2 PROJECT FINANCING

The project financing is given in Table below.

### Project Financing by Co-financing Partner and Component

Component	Total Cost (US\$ million)	Co-financing					GEF
		UNF	FFEM	EBC	UNECE	Region	
1. Establish public-private equity fund	4.170	0.500	1.170	--	0.600	--	1.900
2. Develop expert skills to prepare bankable projects	4.100	0.920	0.650	0.130	1.100	0.700	0.500
3. Assistance policy reforms to support investments	3.550	0.500	0.520	0.130	1.100	0.700	0.500
4. Monitoring and Evaluation	0.440	0.080	0.260	--	--	--	0.100
Total	12.060	2.000	2.600	0.260	2.800	1.400	3.000

The financing required for the project comprises activities under each immediate objective to be implemented in the eight proposed participating countries together with co-financing partner institutions

with compatible mandates to those of the GEF. The resources requested from the GEF would be allocated as follows:

**Objective 1:** Establish a public- private equity fund:

Objective 1 total resource requirements: US\$ 4,170,000

Objective 1 GEF contribution requirements: US\$ 1,900,000

**Objective 2:** Develop the skills of the public and private sector experts at the local level to identify, design and submit bankable projects for financing to the Fund:

Objective 2 total resource requirements: US\$ 4,100,000

Objective 2 GEF contribution requirements: US\$ 500,000<sup>3</sup>

**Objective 3:** Raise the general awareness regarding Energy Efficiency and Renewable Energy and provide assistance to municipal authorities and national administrations to introduce economic, institutional and regulatory reforms needed to support the investment proposals developed in the framework of the project:

Objective 3 total resource requirements: US\$ 3,550,000

Objective 3 GEF contribution requirements: US\$ 500,000<sup>3</sup>

### **Monitoring and Evaluation**

Monitoring and Evaluation total resource requirements: US\$ 440,000

Monitoring and Evaluation GEF contribution requirements: US\$ 100,000

The total participation of the GEF to the technical assistance project budget is for US\$ 3,000,000 within a project total of US\$ 12,060,000 in view of US\$ 4,860,000 in confirmed co-financing arrangements from the United Nations Foundation (UNF), the Fonds Français pour l'Environnement Mondial (FFEM) and the European Business Congress. Letters of confirmation and Board Decision Documents are included in Annex E. The UNECE secretariat will make an 'in kind' contribution of US\$ 2,800,000 and participating countries will provide an 'in kind' contribution of US\$ 1,400,000 (see below).

### **Project Execution and Support Costs**

The project will be executed by UNECE with the support of the UN Office of Project Services (UNOPS). The UNOPS participation in the execution of the project will be conducted through their office in Geneva and local offices in selected participating countries. The terms of their participation will be established in a Memorandum of Understanding between UNECE and UNOPS and through the MOU already established between UNOPS and UNFIP (United Nations Fund for International Partnership, one of the other project co-financiers).

The support costs for the execution of this project will apply to the funds provided by the UN Foundation, the French Government (FFEM), the European Business Congress (EBC) and the GEF, a total of US\$ 7.86 million. It has been agreed between UNEP, UNECE and UNOPS that the support costs will come to a maximum of 8 per cent apportioned across the project components as shown in the Table below.

### **UNECE AND UNOPS PROJECT EXECUTION SUPPORT COSTS**

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<sup>3</sup> As far as the use of this GEF contribution is concerned and in order to avoid the risk of financing the same activities twice from two distinct windows, in Russia, Bulgaria and Romania, contacts with the World Bank/IFC task managers of the facilities set up in these countries have been already taken with the view of establishing an efficient co-ordination.

<b>Component</b>	<b>Support Costs</b>	<b>Total Cost (US\$ thousand)</b>
1. Establish public-private equity fund	285.6	3,570
2. Develop expert skills to prepare bankable projects	176.0	2,200
3. Assistance policy reforms to support investments	132.0	1,650
4. Monitoring and Evaluation	35.2	440
<b>Total</b>	<b>628.8</b>	<b>7,860</b>

### **7.3 NATIONAL COUNTERPART CONTRIBUTION**

A prerequisite required of each participating country to start implementation, will be to provide project offices, office equipment, consumables, staff (both professional, including the full-time services on a National Co-ordinator and support personnel) and computer technology for Internet operations for the duration of the project. The precise composition of the national project management teams and their office facilities will be determined during the project inception phase. At a minimum, the National Co-ordinator will need to be equipped with the computer hardware, software, modem and telephone line connection to operate a site on the World Wide Web and to correspond by electronic mail. These communications will be mainly in the English language.

The work methods for this project will require the extensive use of the Internet and of electronic communications through the National Co-ordinator and with energy manager of each energy efficiency and renewable energy investment project. Ideally, project team should have access to the World Wide Web and electronic communications. In terms of work months, host countries as an 'in kind' contribution will provide most personnel costs for the local implementation of project operations. This contribution will include the costs of experts taking part in project training courses for business planning and financial engineering. The facilities and personnel services provided on an 'in kind' basis for project operations are estimated to be approximately US\$ 25,000 per year

## **8. MONITORING, EVALUATION AND DISSEMINATION**

### **8.1 MONITORING AND EVALUATION**

The project will be subject to the standard reporting, monitoring and evaluation procedures of the UNEP, GEF and the UNECE requirements for regular budget and extra budgetary supported activities under the Programme Performance Review of the United Nations system. UNEP and UNECE will be responsible for a mid-term and an end of project analysis and report. While UNECE and the PMU will monitor closely the indicators for outcomes of the project, UNEP will have special responsibility for evaluating the carbon emissions reductions (see 8.3 below).

The progress of project operations will be reported and reviewed by the Project Steering Committee at its biannual sessions. The schedule for project reviews, reporting and evaluation in relation to project milestones will be included in the project work plan and timetable. The evaluation reports of project operations will be used as background documents for assessing the project and for incorporating relevant past experience in the evaluation findings.

In addition, the evaluation needs of each supporting institution will also be met through the participation of one or more Monitoring and Evaluation Advisers. A monitoring and evaluation plan will be included in the Project Document but the administrative technical and financial arrangements to enable a continued monitoring of the project progress and performance are outlined below. In addition, a method of using the

verifiable indicators of performance and means of verification from the Log-frame Matrix contained in Annex B is also summarised.

## **8.2 UNITED NATIONS PROGRAMME PERFORMANCE REVIEW**

The project is planned to be included in the programme performance review of the Biennium Budgets of 2004-2005 and 2006-2007 Section 20 Economic Development for Europe Sub-programme 5 Sustainable Energy. It is included in the results based budgeting process and is evaluated by indicators of achievement with respect to the expected accomplishment of progress towards the formation of an energy efficiency market in Eastern European economies in transition.

## **8.3 GLOBAL ENVIRONMENT FACILITY AND UNEP**

External evaluators appointed by UNEP/DTIE will calculate the achievement of impact from data developed by the project. The data from the investment projects developed under the project provide benchmarks for CO<sub>2</sub>, NO<sub>x</sub> and SO<sub>2</sub> emissions. The potential for reducing such emissions can be calculated for each investment project proposal developed within the framework of project operations. In addition to these project monitoring and evaluation activities, non-governmental organisations with a history of evaluating assistance programs in the energy efficiency field in Eastern Europe will be enlisted to monitor the project and provide feedback.

## **8.4 UNITED NATIONS FOUNDATION**

The project will be subject to reporting, monitoring and evaluation consistent with Article IX of the Memorandum of Understanding between the United Nations Fund for International Partnerships and the United Nations Economic Commission for Europe. The project will also have a Monitoring and Evaluation Adviser to assist all parties in implementation of the project and report to UNF/UNFIP. This requires field review missions, verbal assessments and written annual reports to the Project Steering Committee. Mr. Glen Skovholt, a former Vice President of Honeywell Inc. has been nominated to serve as the Monitoring and Evaluation Adviser by UNF/UNFIP. A budget of US\$ 80,000 from resources approved to the project by the UNF/UNFIP are planned for monitoring and evaluation. There will also be a separate mid-term independent project review by an external consultant.

## **8.5 FONDS FRANÇAIS POUR L'ENVIRONNEMENT MONDIAL**

The monitoring and evaluation of this project on behalf of the FFEM will be carried out by an inter Ministerial committee with representatives of the Ministry of Economy, Ministry of Finance, Ministry of Industry, Ministry of Foreign Affairs and the French Agency for Environment and Energy Management (ADEME) which will review progress twice per year. In order to do this, the Ministry of Foreign Affairs and the secretariat of the FFEM will designate a monitoring and evaluation adviser to work with the PMU at the UNECE. The adviser will also verify that project operations are proceeding in accordance with the agreement between the FFEM and the UNECE. A budgetary allocation of Euro 200,000 from FFEM resources approved for the project has been accorded to monitoring and evaluation.

## **8.6 DISSEMINATION OF PROJECT RESULTS**

The results of project operations will be disseminated by direct communication in training courses, workshops, seminars, biannual PSC meetings and by printed and electronic publications to inform experts, policy makers within city administrations, local authorities, energy utilities and national ministries about the policy reforms needed to introduce energy efficiency and renewable energy investments. This will be accomplished by electronic publishing on the Internet to a dedicated project website, electronic publishing by CD-Rom based eBooks, printed publications distributed in English French and Russian by United

Nations publication outlets. As an indicator of performance, at present Energy Efficiency 21 website usage pattern has a daily average of 40 visitors consulting some 300 files rising to a peak of 600 files consulted daily during project meetings extending participation via the Internet.

Results are also to be disseminated through the electronic and hard copy publication of policy reform studies as well as posting segments of the studies on the project website. The aim of the studies is to develop a new broad analysis of the reforms needed to promote energy efficiency and renewable energy market formation which are linked to case studies will be directly related to a series of specific investment project proposals. These studies provide an incentive for policy makers at different levels because they can be shown what direct social, environmental and financial benefits will be forthcoming from a specific project or series of projects given that particular policy reforms are made. These may be economic, financial, energy pricing and tariff structure, institutional or comparatively simple administrative reforms. Often these changes are needed for economically attractive and pre-feasibility study business plans to become bankable projects.

Results of the project will be disseminated to the general public through United Nations Television (UNTV) that will prepare short video films about the project for broadcast on CNN World Report, EuroNews and EuroVision. National Participating Institutions will be encouraged to adapt these professionally prepared video for broadcast in local languages directly with UNTV or through the EuroVision network.