

**PROPOSAL FOR REVIEW****PROJECT TITLE:****DEVELOPING THE IMPLEMENTATION  
OF THE BLACK SEA STRATEGIC  
ACTION PLAN****COUNTRIES :**Bulgaria, Georgia, Romania, Russian Federation,  
Turkey, Ukraine**GEF FOCAL AREA**

International Waters

**COUNTRY ELIGIBILITY**

Eligible under para 9 (b) of GEF Instrument

**TOTAL PROJECT COSTS:**

\$8,805,000

**GEF FINANCING:**

\$1,790,000

**GOVERNMENT COUNTERPART  
FINANCING OF GEF COMPONENT:**

\$170,000

**GOVERNMENT COUNTERPART  
FINANCING OF GEF ASSOCIATED  
COMPONENTS:**

\$4,362,000

**PARALLEL FINANCING:**

\$2,423,000

**UNDP INPUT:**

\$60,000

**GEF IMPLEMENTING AGENCY:**

UNDP

**EXECUTING AGENCY:**

UN Office for Project Service

**ESTIMATED STARTING DATE:**

1 September 1996

**PROJECT DURATION:**

12 months

**GEF PREPARATION COSTS:**

US \$ 49,000 under PDF Block B

## PROJECT BACKGROUND AND CONTEXT

1. The Black Sea is now widely recognized as one of the regional seas most damaged by human activity. Its drainage basin covers over one third of the European continent including major areas of seventeen countries, fourteen of which are undergoing a profound economic and political transition from centrally-planned to market economies. The management of the Black Sea itself is the shared responsibility of the six coastal countries: Bulgaria, Georgia, Romania, Russian Federation, Turkey, and Ukraine. Until recently, there was no common formal framework for cooperation between these coastal countries and no means of planning and implementing joint actions to halt and reverse the worsening environmental situation.

2. As a result of recent strong cooperation among the Black Sea countries, much of which was within the broad framework of the GEF Black Sea Environmental Programme<sup>1</sup> (BSEP), an extensive effort has been made to gather, analyze and disseminate reliable information on the state of the Black Sea environment. These activities have confirmed the serious state of the commons and coastal environment and its consequences for the coastal economies of the six Black Sea countries. Particularly acute problems have arisen as a result of pollution (notably from nutrients, faecal material, solid waste and oil), a catastrophic decline in commercial fish stocks, a severe decrease in tourism and an uncoordinated approach towards coastal zone management.

3. The transboundary nature of most of these problems, coupled with earlier political realities, was the main reason for the insufficiency of previous control measures. Only through acceptance of common but differentiated responsibilities, is it possible to take coherent actions to reverse this situation. The problems themselves, however, also have important extra-regional and global dimensions. One of the main factors in the decline of Black Sea fisheries, for example, was the massive invasion of the Black Sea by a comb jelly, *Mnemiopsis leidyi*, which was probably accidentally introduced one decade ago in ship-borne ballast water from the eastern seaboard of America. Unchecked by natural predators, *Mnemiopsis* attained a Black Sea biomass an order of magnitude higher than that of the world's annual fish harvest. Its presence in the Black Sea represents a threat to other regional seas. Similarly, quantities of persistent pollutants, such as persistent organic pollutants of global significance, reach the world ocean from the Black Sea basin and reduction in their sources to the Black Sea is an essential part of a global strategy to control them. Finally, the conservation of biodiversity in the Black Sea as well as the preservation of Black Sea habitats, vital for endangered migratory bird populations, has an important global significance.

4. The six Black Sea coastal countries have initiated joint action to protect this unique environment. With the support from a GEF Pilot Phase programme, concrete, country-driven actions have been launched. However, because of the short time frame of the GEF Pilot Phase programme (three years, terminating on 30 June, 1996), the economic realities of the coastal countries and the recently approved GEF Operational Strategy, a new step has to be taken in order to allow a strategic reorientation of the project. While building upon the three year pilot phase activities, this project will enable the smooth transition by funding key activities to achieve the results required under the new GEF Operational Strategy on International Waters. In particular, it will allow the full development of the Black Sea Strategic Action Plan which will be consistent with the GEF Operational Strategy.

5. In 1993, as a response to regional and global concern about the critically degraded environmental conditions in the Black Sea and to the positive policy initiative of the six Black Sea

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<sup>1</sup> The Black Sea Environmental Programme (BSEP) is a condensed form of the title of the GEF Pilot Phase Programme "Programme for Environmental Management and Protection of the Black Sea (RER/93/G31)". The condensed form was adopted by the "Second Meeting of National Coordinators" held in Moscow, November, 1994. It provides a convenient umbrella for the GEF project and those of the collateral partners.

governments in subscribing to the 1992 Odessa Ministerial Declaration, a three-year GEF Pilot Phase project was approved. This project, entitled "Environmental Management and Protection of the Black Sea (RER/93/G31)" focused on three main objectives: (1) to strengthen and create regional capacities to manage the Black Sea ecosystem, (2) to develop an appropriate policy and legislative framework for the assessment, control and prevention of pollution and maintenance and enhancement of biodiversity, and (3) to facilitate the preparation of sound environmental investments. An independent evaluation of the project conducted in November 1995, revealed that "In general terms, the BSEP may be qualified as a success, and its approach towards achieving its goals could stand [as a] model for other complex regional programmes..."<sup>2</sup>. It also urged the GEF partners to continue their support for international actions to restore the Black Sea.

6. During the three years since the creation of the BSEP, there has been an important additional development which has motivated the Black Sea Governments to formulate the present project brief. By early 1994, all six Governments had ratified the Bucharest Convention for the Protection of the Black Sea Against Pollution. The creation of a Black Sea Commission<sup>3</sup> with a permanent Secretariat in Istanbul to be in place by mid-1996, will provide an essential mechanism for sustaining the achievements of the BSEP and implementing the Black Sea Strategic Action Plan. A major portion of the BSEP and its infrastructure can be gradually integrated into the Secretariat. However, there are still a number of barriers to be overcome: the legislative framework should be completed in order to operate effectively<sup>4</sup>, the Odessa Declaration and the Black Sea Action Plan should be fully integrated as a single process.

7. As required by the GEF Operational Strategy, on the basis of the transboundary water-related environmental analysis, a Strategic Action Plan (SAP) should now establish clear transboundary priorities as well as a realistic baseline for environmental commitments by the countries themselves. It also has to determine the agreed incremental costs for subsequent assistance (cf. box 4.1, Key Elements of Strategic Action Programs). For this to occur, National Actions Plans addressing the priorities identified by the SAP have to be formulated and activities included in the SAP have to be realistically evaluated. In addition, it is necessary to develop a basin-wide approach to manage pollution inputs to the Black Sea. This can only be properly achieved through full cooperation between all seventeen Black Sea basin countries, by ensuring the strategic coordination of GEF activities which should now be developed.

## PROJECT OBJECTIVES

8. The overall long-term objective of this project is to foster sustainable institutional and financial arrangements for effective environmental management and protection of the Black Sea, in accordance with the Black Sea Strategic Action Plan. This project is composed of four objectives:

- Objective 1: Consolidation of the policy strategy to implement the Black Sea Strategic Action Plan;**
- Objective 2: Preparing the Technical Implementation of the Black Sea Strategic Action Plan;**

<sup>2</sup> Environmental Management and Protection of the Black Sea (RER 93/G31), Project Evaluation Environmental Management Report. Global Environment Facility/ United Nations Office for Project Services, New York, November 20, 1995, 27pp.

<sup>3</sup> The Commission for the Bucharest Convention for the Protection of the Black Sea Against pollution was established in April 1995. The Commission will be known as the "Istanbul Commission" and its Secretariat will be housed in a joint facility with the BSEP which is provided by the Government of Turkey and was inaugurated in January 1996 by the Turkish Minister of Environment.

<sup>4</sup> This will be a process supported by the Black Sea countries and will not be financed as part of the present project.

**Objective 3: Supporting public involvement to facilitate the adoption of the Black Strategic Action Plan**

**Objective 4: Developing the Financing of the Black Sea Strategic Action Plan.**

9. The last component of the project is the financing of the staff and the operating costs which are needed to manage it in the Programme coordination Unit. These first four objectives require a set of activities designed to overcome the barriers to the adoption of the Strategic Action Plan as described in the previous section. They form the basis of the current proposal.

## **PROJECT DESCRIPTION**

10. The project consists of four interdependent components which address the major objectives described above. The project, and the costs of implementing each activities, have been estimated and included in the attached tables (see Annex 1). In many cases, supplementary donor contributions have already been assured and are indicated together with the source of funding.- Donor contributions in an advanced stage of negotiation are shown in square brackets. These tables will thus constitute the central element in developing the project workplan (see Annex 1).

### **OBJECTIVE 1: Consolidation of the policy strategy to implement the Black Sea Strategic Action Plan**

11. In order for the management regime for the Black Sea commons to become effective, there is a need to consolidate a modern legal and policy structure. The Black Sea has a legally binding Convention -- the Bucharest Convention on the Protection of the Black Sea Against Pollution -- which was ratified by all legislative assemblies of the Black Sea countries and came into force in early 1994. It also benefits from a strong policy agreement: the Odessa Ministerial Declaration on the Protection of the Black Sea was prepared by the six Black Sea Governments, assisted by UNEP, and signed in April 1993. Some of the Protocols to the Bucharest Convention are still incomplete and their absence leaves important gaps in the legal framework for managing the Black Sea. These gaps will be filled as a result of actions proposed in the context of the Istanbul Convention itself. Regarding policy, the Odessa Declaration reflects the modern environmental management concepts of Agenda 21 but limits itself to a short-term three-year pragmatic programme of urgent actions, most of which should be completed by mid-1996. UNEP was assigned the role of reviewing its implementation.

12. In addition, the UNDP/GEF pilot phase project is currently assisting the Black Sea Governments to develop a medium/long-term Black Sea Strategic Action Plan. In this context, the Governments have recognized the need to consolidate these two policies (the SAP and the Odessa Declaration), as reinforced during the last Task Force meeting in Istanbul (June 24-28,1996) and to develop corresponding National Action Plans for the Black Sea.

#### *Sub-objective 1.1: Finalisation and endorsement of the Black Sea SAP*

13. The activities to be carried out under this component will enable the draft Black Sea Strategic Action Plan (formulated during the Pilot Phase project) to be adopted by the Black Sea governments and consolidated, together with the Odessa Ministerial Declaration, into a single policy framework to be approved at ministerial level. There will also be a need to formulate National Black Sea Action Plans with clearly defined priorities and a workplan for implementation. Currently, the Black Sea nations are devoting substantial efforts to update their environmental laws and regulations. Likewise, local coastal authorities are increasingly active in planning specific actions for the protection of their coastal resources. These efforts, along with legislative and sectoral policy measures, need to incorporate the key common aspects of the regional approach.

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14. The specific activities envisaged are:

- 1.1.1 Preparation of a Ministerial Conference for the formal adoption of the Black Sea Strategic Action Plan (BS-SAP) based upon a Transboundary Diagnostic Analysis (TDA). This activity will be carried out as a process which will include regular dialogue with all sectors of the Government. A technical meeting will review the final version of the draft BS-SAP and the TDA (which will be incorporated as a formal annex to the BS-SAP). It will consider actions required to consolidate the strategy to implement the Black Sea Strategic Action Plan.
- 1.1.2 Triennial Ministerial Conference to review the implementation of the Odessa Declaration, and consider adoption of a revised or new Declaration and the Black Sea Strategic Action Plan.
- 1.1.3. Support to national country teams from coastal states to formulate National Black Sea Strategic Action Plans, consistent with national and international policy instruments and legal obligations<sup>5</sup>.

*Sub-objective 1.2: Facilitating a Black Sea Basin approach*

15. Many programmes are currently carried out in the Black Sea Region without clear coordination. At a meeting in March 1996, the three GEF Implementing Agencies have highlighted the following projects and programmes: UNDP/UNOPS are implementing the Danube and the Black Sea Pilot Phase GEF projects as well as the Dniپر PDF GEF project. The World Bank is implementing the Danube Delta Biodiversity project. The Netherlands are contributing to a Sea of Azov project and the World Bank is working on the Lower Don as part of the environmental loan to the Russian Federation. In addition, there are several biodiversity projects in the Region (GEF UNEP and/or World Bank) as well as World Bank and EBRD pre-investment studies.

16. It was agreed that a Basin wide meeting should be held which will allow to review on-going activities, in particular in the context of the implementation of the Strategic Action Plans which should take place in the near future. This would help to overcome some of the difficulties which are being faced in the planning of future GEF International Waters activities in the Region.

17. Therefore, one specific activity is proposed to initiate this approach:

- 1.2.1 Workshop to identify the necessary steps to develop a basin wide approach for the protection of the Black Sea, consistent the GEF Operational Strategy on International Waters.

**OBJECTIVE 2: Preparing the Technical Implementation of the Black Sea Strategic Action Plan**

18. The activities carried out under this second objective will reinforce the regional capability to implement the strategy to be developed under the first objective. The Pilot Phase project made important advances in this respect through an intensive programme of capacity building. The result is

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<sup>5</sup> Note that UNDP will make a financial contribution to this activity by the provision of sustainable development advisors and other services through UNDP Country Offices.

a balanced network of institutions with the means to work together on themes of direct relevance to the implementation of regional policy and laws. The present objective requires this network to be put to use in ensuring implementation of the Convention and compliance with its Protocols, as well as technical backstopping of the Istanbul Commission<sup>6</sup> itself. It is important to note that the project activities will only cover part of the added cost of extending national programmes to the regional dimension. Additional funds needed will be covered through parallel funding by the CEC and by the contributions of the Governments themselves. The CEC Tacis and Phare programmes are assuming an increased role in funding, as confidence builds in the viability of the programme.

19. Compliance is one of the most important issues in managing the commons. Compliance with pollution control measures can only be assessed by the long-term monitoring of key pollutants and their effects. The data exchanged for this purpose must be fully validated by the application of strict quality assurance/quality control measures. The US \$2 million investment during the pilot phase on enhancing the capacity of regional laboratories should serve as the starting point for the integration of a regional monitoring network based upon compatible national networks and a common quality control programme. At a local level, compliance with the national/regional emission standards will also require the enhancement of the capacity of pollution inspectors to make valid measurements and apply them consistently. Support from bilateral donors will be sought to assist countries with the work of the inspectorates.

20. In the case of oil-related incidents and the application of the MARPOL Convention<sup>7</sup>, a special strategy will be required to ensure compliance. This will rely heavily on “event monitoring and reporting” (checking on ship’s equipment and operational spills and discharges). A workshop will be the first step towards a regional policy for ensuring such compliance. In parallel, a full survey will be conducted of current practice regarding port reception facilities for ballast water and ship-derived solid waste. The survey will be implemented by IMO and co-financed by the European Union (Tacis). The work will include preliminary investigations on best available technology for the elimination of opportunistic species from ballast waters. Work on risk reduction by exploiting improved navigation technology in straits adjacent to the Black Sea, will be addressed and involve the private sector.

21. The specific activities planned will allow to:

2.1.1 Provide technical assistance to extend national monitoring programmes into a regionally compatible network through: (a) the organisation of a programme of quality control/quality assurance and (b) the procurement of essential expendable items.

2.1.2. Organise a study and workshop to design a regional strategy which would ensure compliance with the MARPOL Convention and recent initiatives on the prevention of transboundary movements of opportunistic species. The study should also consider the application of modern technology and should analyze trends and future scenarios related to the shipment of oil in the Black Sea.

## *2.2: Coordination, information and data exchange mechanism*

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<sup>6</sup>The Istanbul Commission for the Convention for the Protection of the Black Sea Against Pollution (Bucharest, 1992, 1994)

<sup>7</sup>The Black Sea is considered a “Special Area” under the MARPOL Convention and stricter emission limits will be applied to ships when the Convention is fully enforced.

22. The Governments have expressed their satisfaction with the network of Working Parties and Activity Centres established under the GEF pilot project in support of the Bucharest Convention and the Odessa Ministerial Declaration. The support requested from the GEF does not cover the running costs of the network nor of the Activity Centres themselves. It will assist the network to address technical problems related to the implementation of the Action Plan through the sponsorship of annual Working Party meetings for training, data exchange and project preparation. The following fields will be covered:

- emergency response to oil and chemical spills (Activity Centre 1, Varna)
- routine pollution monitoring (Activity Centre 2, Istanbul)
- special pollution monitoring, biological and human health effects, and environmental quality standards (Activity Centre 3, Odessa, Ukraine)
- protection of biodiversity (Activity Centre 4, Batumi, Georgia)
- development of common methodologies for integrated coastal zone management (Activity Centre 5, Krasnodar, Russian Federation)
- fisheries (Activity Centre 6, Constanza, Romania).

23. The support provided using GEF funds will be catalytic only. Fundraising activities will continue in order to ensure a wider role of the Activity Centres in the programme. Interest has been shown in sponsorship from the Phare programme (ACs 1 & 6), the Tacis programme (ACs 3, 4 & 5) and private industry (AC 1). A Black Sea Fisheries Convention (under preparation) may also benefit from the work of the Fisheries Activity Centre.

24. Support for the integration of the Istanbul Commission Secretariat is an important feature of goal 2.2. Specific assistance will be offered in office management, improvement of communications through the establishment of more appropriate INTERNET facilities (server, home page, connection of all National Coordinators and those focal points not yet on line) and the further development and regular updating of the Black Sea information system and GIS. For their part, the Governments are already committed to the stepwise staffing of the Secretariat within joint facilities with the PCU.

25. The activities to be conducted within goal 2.2 will allow to:

- 2.2.1 Organize coordination workshops / training activities on major thematic areas including regional contingency planning, biodiversity conservation, diffuse sources of pollution (including airborne pollution), aquaculture development, fisheries and food safety, coastal zone management.
- 2.2.2 Improve communications by completing the installation of appropriate INTERNET facilities in ministries of environmental protection and the Secretariat of the Istanbul Commission, and by setting up a bulletin board system within the Secretariat.
- 2.2.3 Further develop a Black Sea Management Information System, comprising data bases on different aspects of Black Sea environmental management, modern informatics tools and a comprehensive Geographic Information System based on the achievements of the pilot phase of the programme.

**Objective 3: Supporting public involvement to facilitate the adoption of the Black Sea Strategic Action Plan:**

26. Participation of all sectors of society is an essential requirement for the development of sustainable policies in the region. It requires the development of education projects, transparent and participatory decision making procedures and open rules on access to administrative and judicial procedures.

27. There will be a need to present the public with convincing arguments on the need for continuous long-term efforts to manage and protect the Black Sea and to raise awareness of the issues addressed by the Black Sea Action Plan and for promoting the work of the Black Sea Commission. The NGOs will have a particularly important role in this work. Activities to ensure the wider public participation in the project will be carried out in order to achieve this essential goal in conformity with the GEF Operational Strategy.

28. Municipalities will be closely involved in the implementation of this Strategic Action Plan. Both existing mechanisms will be developed for this purpose. Black Sea Club of Cities, as well as new mechanisms will be cooperate nationally and with municipalities in other countries and regions. For its part, the CEC (Phare and Tacis) have agreed to provide additional support for the public awareness campaign which will accompany the official launch of the Black Sea Action Plan. It will also continue to support certain NGO training activities.

29. The detailed activities will be the following:

- 3.1 Social assessment of specially affected populations due to the Black Sea issue.
- 3.2 Design of a public awareness programme for schools, local communities on issues such as wetland management, overfishing etc...
- 3.3 Consultations with local authorities, private groups and local NGOs, private investors and other stake holders to ensure that local investments in the design future investments and other activities.
- 3.4 Publication and dissemination of 2 Black Sea Newsletters (includes editing, translations into two languages).
- 3.5 Supporting the regional Black Sea NGO Forum (7 meetings).
- 3.6 Supporting the implementation of concrete small scale environmental projects of regional/global significance

**OBJECTIVE 4: Preparing the Financing of the Black Sea Strategic Action Plan**

30. The ultimate success of the Black Sea Action Plan will depend largely on the development and implementation of a cost-effective strategy for financing environmental actions and investments. In this process, and in close cooperation with Government authorities, the role of the Black Sea Environmental Programme should consist of the following two inter-connected elements:

- Cooperation in planning, i.e., developing coherent, cost-effective regional priorities and strategies for environmental actions and investments;



- Identification and selection of, and assessment of donor and IFI interest in, specific environmental investments and demonstration projects.

31. The first element, relating to strategic planning of investments, has already largely been achieved with the preparation of national and regional Black Sea Environmental Priorities Studies (BSEPS) of the GEF pilot phase project. With the completion of BSEPS and Black Sea regional and national action plans, a strategic and policy framework will have been established, thereby providing criteria through which Black Sea-related environmental actions and investments may be judged. This framework will provide a useful means of evaluating the relative priority of alternative investment options, and an umbrella for helping to coalesce donor and IFI support for a high-profile regional cause.

32. The second objective of the present project will therefore focus on the second element outlined above. It is designed to respond to the identified need both for additional financial resources to be mobilized from within the region as well as for available donor resources to be effectively channeled towards well-identified, high priority demonstration projects and investments. Specifically, activities under this objective will include a selection of demonstration projects and environmental investments, developed in accordance with the priority framework outlined above, to be prepared and presented to donors and IFIs.

*4.1 A well developed portfolio of Black Sea environmental investments, reflecting national priorities for presentation to a mid-1997 conference.*

33. The process followed by the BSEP during the pilot phase has involved moving from detailed national and regional assessments through to the preparation of regional, and eventually national, action plans. Throughout this process, and particularly in the course of preparation of BSEPS, a large number of investment possibilities are being brought to light. At the same time, both national and regional priorities with respect to the issue are being clarified. Finally, a draft Black Sea Strategic Action Plan (SAP) has now been prepared. This document was based upon a full Transboundary Diagnostic Analysis (reflecting the new requirements of the International Waters chapter of the GEF Operational Strategy). The Black Sea SAP will not be fully formulated and effective without detailed commitments which will have to be reflected into the National BS SAP. Only this type of analysis will allow to define the baseline for future incremental costs of possible GEF support.

34. It is critical that the process of attracting and coordinating external sources of support for addressing Black Sea environmental degradation be carefully tied to the findings and conclusions of the above assessment/action planning process. A sub-regional donor meeting of the IFIs (in coordination of the Project Preparation Committee, will be hosted by the Black Sea Commission Secretariat. In this way, the sub-regional and thematic expertise developed by the GEF project will be linked to investment identification, pre-feasibility and financing identification process. In addition, the investment prioritization and identification processes and the process of locating and putting together financial support packages would also be tied closely together. Perhaps most importantly, both national and regional priorities could be jointly addressed in this manner. Given the above, the present component will:

- 4.1.1 Prepare, in consultation with coastal countries and IFIs, a selection of high-priority demonstration projects and regional environmental investments, based upon the "Black Sea Environmental Priorities Study" and the commitments contained the Black Sea Strategic Action Plan and the National Environmental Action Plans to be developed

- 4.1.2 This selection of projects will be submitted for international financial support, *inter alia*, through presentation to regional meetings of donors and international financial institutions.

4.2 *Assessment of a mechanism to provide sustainable financial support to the Black Sea programme:*

35. As the GEF-BSEP has gathered momentum, a new and imminent danger to the overall process has emerged. The implementation of newly ratified legal and policy agreements requires a sustainable mechanism of regionally-based financial support which does not rely upon haphazard voluntary contributions. Thus, although the Convention for the Protection of the Black Sea Against Pollution (Bucharest Convention) is fully ratified, the Contracting Parties are unable to implement it as they lack a financial mechanism for sustaining its Secretariat. Similar problems could emerge with implementation of the Black Sea Action Plan, particularly its incremental cost components. This problem - the financing of commons management regimes - has dogged regional programmes worldwide. It is thus a problem of global dimensions. **Who is to apportion and finance the incremental costs of commons management?**

36. A Black Sea Environmental Fund could represent a sustainable source of finance for addressing environmental problems of regional and global significance. Such a fund could be self-sustaining, managed regionally and an eventual source of capital for environmental investments. The proposed regional fund could be financed primarily through *common economic instruments applied on a nation-by-nation basis across the region*. The purpose of the fund would be to ensure the financial sustainability of international cooperation for the Black Sea by providing a source of financial support for activities of international concern. These issues represent the incremental elements of the ongoing programme, i.e., the 'commons' issues which cannot be dealt with by any single state.

37. Such a funding mechanism was not planned at the time the Black Sea Environmental Programme (BSEP) was approved, but it has since emerged as an innovative possible solution to the crucial problem of financing. Following support shown for the concept at a number of regional and international fora, in 1995 a series of six consultation workshops was held, one in each Black Sea coastal country, with finance from a GEF-PDF block B grant. The purpose of the meetings was to determine: (i) the degree of interest on the part of national governments in the Fund proposal and in the possibility of obtaining further GEF funding for a detailed feasibility study on establishing the Fund, and; (ii) the preliminary views of different parts of government concerning the Fund proposal and its prospects for approval at the national level. Each workshop reached the conclusion that the idea of an economic instrument-based regional environmental fund for the Black Sea should be developed through an in-depth feasibility study.

38. Activities under the sub-objective are aimed at demonstrating the feasibility of a Black Sea environmental fund as a mechanism to provide a sustainable source of financial support for the of Regional management the Black Sea environment. The following specific activities will be undertaken:

- 4.2.1 Conduct detailed national-level examinations of the feasibility of adopting selected, commonly agreed economic instruments as sources of revenue for a regional fund. Several possible instruments will be considered after reviewing at national levels the legislative requirements to enable participation in a regional environment fund.

- 4.2.2 Prepare a framework paper recommending the structure, rules and governance procedures of a proposed regional fund.
- 4.2.3 National and regional consultations to review and agree upon issues associated with revenue sources, disbursement priorities and governance; assess the interest on the part of potential contributors to a regional environmental fund, including private sector, donor and financial institution sources.

## **RATIONALE FOR GEF SUPPORT**

39. This project is fully consistent with the Waterbody-Based Operational Programme in the **GEF Operational Strategy**.

40. It responds to Governments requests, both through the existing short-term action plan (The Odessa Ministerial Declaration) and the medium/long-term Black Sea Action Plan, which it will help to consolidate into a single policy framework.

41. This transitional project will help facilitate the development of the GEF strategic Black Sea Basin approach.

## **SUSTAINABILITY AND PARTICIPATION**

42. The present project proposal takes into account and directly addresses the continuing challenge in ensuring the sustainability, not only of project-generated benefits, but rather of all benefits created during the past several years of regional environmental cooperation. The three elements of the project are designed to ensure that the various legal, institutional and human 'resources' which have thus far been created and mobilised do not simply dissipate following the conclusion of the GEF Pilot Phase project, but rather are further enhanced. Only this combination of enhanced human, financial and legal resources can ensure the ultimate sustainability of regional benefits.

43. Particular features of this project designed to enhance the sustainability of its benefits include the following:

- a) The approach taken is one of stepwise implementation of control measures and technologies in parallel to efforts to improve the rational exploitation and economic yield of the Black Sea environment.
- b) The involvement of Black Sea country Governments in the design and management of the programme, including financial planning and review on an annual basis.
- c) The application of a "top-down-bottom-up" approach which balances the role of authorities with that of the general public and the use of regional expertise and mechanisms and avoiding over-reliance on outside expertise.
- d) The continued development of a network which uses local resources and infrastructure and balances the responsibilities for its maintenance among the six Black Sea countries.
- e) The use of modern, cost-effective means of electronic communication, thus avoiding unwarranted travel and associated expenses.

- f) The creation of co-funding packages which enable donors to add value to the initial investments of GEF funds.
- g) An emphasis on on-the-job training which encourages the formation of local teams, rather than on the training of individuals who may easily be lost to the network.
- h) The translation of regional policies and laws to national policy and legislation in order to achieve effective management of the commons.

44. The current project proposal has evolved through a careful process involving Governments of the region (including environment and other ministries), NGO representatives and external project evaluators. The result is a project which has been endorsed by all six national coordinators and which will enjoy the widespread support and involvement of relevant actors in the region.

## **LESSONS LEARNED AND TECHNICAL REVIEWS**

45. The above-mentioned evaluation mission report<sup>8</sup> constitutes an independent appraisal of the management and implementation of the Pilot Phase project and contains recommendations to the GEF Council regarding future projects. It recommends the extension of the Pilot project for some six months in order to permit the conclusion of "current tasks", which include the urgent investment portfolio (UIP) executed by the World Bank. It also recommends the formulation of a second phase project to permit the transfer of responsibilities and functions from the PCU in order "to guarantee the success of the activities of the first years of the Istanbul Commission and its Secretariat". Operationally, it is not possible to provide supplementary funding to extend a GEF Pilot Phase project and the present self-standing project therefore constitutes a compromise which enables the recommendations of the evaluators to be fully embraced, whilst keeping in line with the new GEF Operational Strategy for International Waters. All elements of the Pilot Phase project should be completed prior to the starting date of the present proposed project, except for the World Bank implemented UIP which will be completed in early 1997.

## **PROJECT FINANCING AND BUDGET**

46. The indicative total cost of the project (including the baseline) is \$8.805,000. The share which is proposed to be covered by the GEF amounts to \$1.790,000 that of the Black Sea Governments is estimated at \$170,000 and that of the collateral donors (pipeline contributions) stands at \$2.473,000. The existing commitments consist mainly of funds from TACIS and PHARE programmes of the European Union, though significant contributions are currently being negotiated from other donors, such as the Governments of the Netherlands, Denmark, Japan, UK and Switzerland. The contributions of the Governments will include the support to the Istanbul Commission and for the implementation of the Bucharest Convention and Odessa Ministerial Declaration at a national level estimated at \$100,000. The Government of Turkey is making an additional contribution, estimated at US\$70,000 by providing the office space and maintenance costs for the PCU.

## **INCREMENTAL COSTS**

47. The Black Sea represents an environmental resource shared across national boundaries. Six countries -- those having Black Sea coastlines -- are the main consumers of the numerous

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<sup>8</sup> Environmental Management and Protection of the Black Sea (RER 93/G31), Project Evaluation Report. Global Environment Facility/ United Nations Office for Project Services, New York, November 20, 1995, 27pp.

environmental and economic benefits represented by this resource. However, nationals of other countries also utilise or benefit from the resources of the Black Sea in different ways, e.g., as a tourist resource, a source of fish for their consumption, a sink for their pollutants, or a transit point for migratory birds which they value. Thus, improvements in the capacity of the coastal countries to manage the Sea, eventually leading to physical improvements in its environmental quality, will generate both regional as well as extra-regional, or global, benefits.

48. The transitional project will facilitate the completion of the strategic work started during the pilot phase project. The completion of the SAP and the National Action Plans is the process which is needed to enable the countries to comply with the GEF Operational Strategy. Therefore, the full discussion on Incremental Costs does not apply here. However, a significant co-funding both from the countries themselves and from other donors has been mobilized. Further details concerning incremental cost issues associated with the specific project activities are shown in Table 1. From this, it is evident that there are three 'categories' of incremental cost being supported by the proposal:

- a) costs to remove transaction barriers in most cases the baseline is defined by the existing national arrangements, and occasionally, for the purposes of the project, the incomplete international arrangements.
- b) costs to extend on-going national programmes to serve the commons/transboundary programme of action.
- c) zero baseline costs specific to the purposes of the international programme .

49. Finally, it should be noted that the running costs of operating the Secretariat of the Istanbul Commission will be funded by Governments. GEF funding will not be utilised for this purpose.

50. Table 1, presented as an integral part of the current text, highlights the nature of the incremental costs for each of the sub-objectives. It estimates the "baseline" (actions serving domestic interests alone), and the "alternative" (actions which would cover both the domestic interests and those of the Black Sea commons and, by difference, the incremental costs). The table estimates the share of the other donors, as well as the GEF, in covering the incremental costs shown. As stated earlier, the donor contributions are best estimates in some cases. This is a consequence of the "leverage" of GEF funds and several donors are awaiting the GEF core fund commitment before making their own final commitments. In the case of the European Union, ECU 1.5 million has already been committed in parallel funding to be exercised in 1996. Contributions for subsequent years are in the pipeline and will follow GEF's response.

## ISSUES, ACTIONS AND RISKS

51. All regional seas management programmes depend ultimately upon the political willingness of the Contracting Parties to cooperate. The "willingness to cooperate" is not necessarily a factor which remains constant with time. It depends not only upon issues of national and international security, but also on the changing economic conditions of the countries involved. The geopolitical factor does not appear to introduce a high risk of project failure at this time; indeed the spirit of cooperation has been evidenced in recent years by the speedy ratification of the Bucharest Convention. It is further exemplified by the willingness of Ministers to subscribe to Action 19 of the Odessa Ministerial Declaration, which calls for the preparation and *wide diffusion* of a triennial report on the status of implementation of the Declaration -- a call for accountability and transparency.

52. The economic constraints are much less predictable. Some countries in the region are facing increasing uncertainties concerning the rate at which they move towards a market economy. The shift appears inexorable, but the state of individual economies varies considerably and, in some cases,

weak economies have forced governments to focus their priorities for investment into areas with a marginal or even negative environmental benefit. These shifts, occasionally demanded by external advisory bodies, have delayed the implementation of sectoral funding mechanisms such as national environmental funds. It is hoped that such constraints will not be imposed on the regional mechanism and the results of the preliminary workshops were positive in all cases. The study will however, include the evaluation of alternative funding mechanisms, in the case that the barriers prove insurmountable in the short term.

53. The slow pace of incorporating international agreements and conventions on the statute books of Black Sea countries is a major cause for concern. However, this is not a problem limited to the Black Sea. The present project strategy incorporates the concept of developing National Black Sea Action Plans which should set an agenda for legal reform as well as for policy changes and investments. Strong public participation in the formulation of these plans should ensure greater political pressure which will help to strengthen the role of the Ministries of the Environment and maintain Black Sea issues at a high level on political (and parliamentary) agendas.

## **INSTITUTIONAL FRAMEWORK AND PROJECT IMPLEMENTATION**

54. The BSEP Steering Committee formed for the GEF Pilot Phase project will be responsible for overseeing project implementation and for establishing and monitoring a detailed workplan. The Governments will be requested to ratify the membership of the Steering Committee and to renew its mandate. It currently includes National Coordinators (mostly Ministers or Deputy Ministers) and their advisors, the Project Coordinator and senior project professional staff, representatives of the GEF Partners and Donors and, as observers, the Black Sea NGO Forum (2), the cooperating UN Agencies, the Danube Basin Management Programme and the Mediterranean Action Plan. Following his/her selection, the Executive Director of the Istanbul Commission Secretariat will also be invited to attend. Activity Centre Directors are invited to attend on an ad-hoc basis. The Steering Committee will meet twice to review the previous year's activities and designs and approves the workplan and activities.

55. The Working Parties of the BSEP network are convened by the Directors of the Activity Centres in close coordination with the PCU. Responsibility for this coordination will gradually be transferred to the Commission Secretariat during implementation of the present project.

56. The UN Office for Project Services will act as Executing Agency for UNDP.

57. The project will be managed by the Programme Coordination Unit (PCU) of the Black Sea Environmental Programme (see last Table Annex 1). which is located in Istanbul, Turkey. The PCU was established in January 1994 in facilities provided by the Government of Turkey. These facilities will be shared with the Secretariat of the Istanbul Commission on the basis of a Memorandum of Understanding.

58. The World Bank shared responsibility for the implementation of some elements of the pilot phase project, and assigned appropriate staff time at its Washington headquarters. This year the World Bank team will be engaged in completing the Urgent Investment Portfolio (UIP) remaining from the Pilot Phase Project. The World Bank will not implement activities under the present project but will participate in BSEP Steering Committee meetings and other organs it considers appropriate to attend.

## **MONITORING AND EVALUATION**

59. The project strategy and outputs are regularly evaluated at annual meetings of the Steering Committee, as indicated in Section 5. Additionally, the project will be subjected to the review

mechanisms of UNDP and an external evaluation will be conducted prior to the termination of the project, in accordance with UNDP rules.

Table 1**Incremental Cost Matrix**

Component (Objective/sub-objective)	Cost Category	Cost <sup>9</sup> (US\$ K)	Domestic Benefits	Global/Regional Environmental benefits
<b>Objective 1: Consolidation of the policy strategy to implement the Black Sea Strategic Action Plan</b>				
1.1 Finalisation and endorsement of the Black Sea SAP	Baseline	600	Policy improvements affecting issues restricted to coastal waters of each state	
	Alternative	970		A programme of common actions at the regional and national levels to improve the quality and management of the Black Sea
	<i>Increment</i>	230 [140]		
1.2 Facilitating a Black Sea Basin approach	Baseline	0	Zero baseline during current projet	
	Alternative	50		Removing barriers to transboundary strategies
	<i>Increment</i>	25 [25]		
<b>Objective 2: Preparing the Technical Implementation of the Black Sea Strategic Action Plan</b>				
2.1 Monitoring the Black Sea	Baseline	900	Existing monitoring programmes/management systems, addressing national issues.	
	Alternative	1.665		Technical assistance for the integration of a regional monitoring programme in order to ensure compliance with international conventions and address global concerns.
	<i>Increment</i>	120 [645]		
2.2 Coordination, information and data exchange mechanism.	Baseline	2000	National institutions and programmes focused on Black Sea.	
	Alternative	3380		Costs of facilitating the international network to refocus existing expertise in national institutions for implementing the BSSAP.
	<i>Increment</i>	230 [1150]		
<b>Objective 3: Supporting public involvement to facilitate the adoption of the Black Sea Strategic Action Plan</b>				
3.1 Public involvement in remedial activities coupled with targeted public awareness strategy.	Baseline	0	Project specific costs with zero baseline	
	Alternative	476		Costs of involving the public with regional and global issues

<sup>9</sup> Square brackets indicate contribution from donors other than the GEF or the regional Governments.



				concerning the Black Sea and needed measures
	<i>Increment</i>	220 [256]		
<b>Objective 4: Preparing the financing of the Black Sea Strategic Action Plan</b>				
4.1 A well developed portfolio of Black Sea environmental investment project, reflecting SAP national priorities.	Baseline	500	Existing studies at a national regional level (national and donors portfolios, BSEPS)	
	Alternative	650		Additional costs to provide information to focus donors and IFIs on investments to address transboundary issues.
	<i>Increment</i>	150		
4.2 Assessment of a mechanism to provide sustainable financial support to the Black Sea programme.	Baseline	0	Zero baseline during current project	
	Alternative	353		Costs to remove barriers and to create a sustainable funding mechanism for addressing transboundary costs involved in managing the Black Sea environment.
	<i>Increment</i>	225 [128]		
<b>Component 5: Project Management</b>				
Staffing/operations	Baseline	400		
	Alternative	1.150		
	<i>Increment</i>	580 [170]		

Baseline/Government share		4.500
Incremental Cost to GEF		1.790
Incremental Cost to other donors		2.515
Total project cost		8.805

## Developing the Implementation of the Black Sea

### Strategic Action Plan

Objective 1: Consolidation of the policy strategy to implement the Black Sea Strategic Action Plan	\$255,000
Objective 2: Preparing the Technical Implementation of the Black Sea Strategic Action Plan	\$350,000
Objective 3: Supporting public involvement to facilitate the adoption of the Black Sea Strategic Action Plan	\$220,000
Objective 4: Preparing the financing of the Black Sea Strategic Action Plan	\$375,000
Black Sea Project Management	\$580,000
<b>TOTAL GEF PROJECT:</b>	<b>\$1.790,000</b>

<b>Programme Objective 1: Consolidation of the policy strategy to implement the Black Sea Strategic Action Plan</b>					
<i>Sub-objectives</i>	<i>Description of Activities</i>	<i>Implementation Modality</i>	<i>Associated Regional Actors</i>	<i>Estimated costs to GEF</i>	<i>Estimated associated donor contribution</i>
1.1. Finalisation and endorsement of the Black Sea SAP	1.1.1 Preparation of a Ministerial Conference for the adoption of the Black Sea Strategic Action Plan (BS SAP) based upon the Transboundary Diagnostic Analysis (TDA); it will include a technical meeting to review TDA and draft BS SAP where actions to consolidate the implementation strategy of the B S SAP will be formulated.	PCU UNEP	IC, NCs	\$20,000	[\$20,000] <sup>2</sup>
	1.1.2 Triennial Ministerial Conference (i) to consider the state of the implementation of the Odessa Declaration ; and (ii) to consider the adoption of the Black Sea Strategic Action Plan and pledge support to the Secretariat of the Convention.	UNEP PCU	IC, NCs id.	(ii) \$30,000 <sup>10</sup>	(i) \$24,000 [\$100,000] <sup>11</sup>
	1.2.3 Support country teams from the coastal states to formulate National Black Sea Strategic Action Plans, consistent with national and international policy instruments as well as the BS SAP. They should include the conclusions of 2.1, 2.2 and 4.1.	PCU, UNDP Country Offices	NCs {World Bank}	\$180,000	\$60,000 UNDP COs
1.2 Facilitating a Black Sea Basin approach	1.2.1 Technical and policy consultations to identify the necessary steps to develop a basin wide approach consistent with GEF Operational Strategy on International Waters for the protection of the Black Sea.	PCUs Black Sea, Danube, Dniiper and other GEF projects	NC,s, GEF IAs	\$25,000	[\$25,000] to be requested from other GEF projects
<b>Total Objective 1</b>				<b>\$255,000</b>	

<sup>10</sup> Non-recurrent cost<sup>11</sup> To be requested from the European Union.

<b>Programme Objective 2: Preparing the Technical Implementation of the Black Sea Strategic Action Plan</b>					
<i>Sub-objective</i>	<i>Description of Activities</i>	<i>Implementation Modality</i>	<i>Beneficiaries/ Associated Actors</i>	<i>Estimated costs to GEF</i>	<i>Est. associated donor contribution</i>
2.1 Monitoring the Black Sea	2.1.1 Technical assistance to allow national monitoring programmes into a regionally compatible network through the organisation of a programme of quality control/quality assurance and procurement of essential expendable items. This activity will facilitate the formulation of common indicators to be agreed by all riparians.	PCU (IAEA, IOC)	AC2&3, NCs, IC	\$70,000	\$320,000 (EU)
	2.1.2 Design of a regional strategy to ensure compliance with MARPOL Convention. The strategy should also consider the application of modern technology and analyze trends and future scenarios related to the shipment of oil in the Black in conformity with the BA SAP Sea; it should also involve the private sector.	PCU (IMO)	IC, NCs, AC1	\$50,000	\$175,000 (EU) [\$150,000] (UK KHF)
2.2 Coordination, information and data exchange mechanism.	2.2.1 Coordination workshops on major thematic areas including regional contingency planning, biodiversity conservation, diffuse sources of pollution (including airborne pollution), aquaculture development, fisheries, coastal zone management as required to facilitate the Black Sea SAP implementation.	PCU (IMO, UNEP, WMO, WHO, FAO)	IC, NCs, ACs 1-6	\$90,000	\$600,000 (EU) [\$500,000] <sup>12</sup>

<sup>12</sup> Under negotiation. See 1995 Donor's Conference Report of GEF Pilot Project.

	2.2.2 Improvement of INTERNET connections and Web Server services for main data centers and Ministries of the Environment for information and data exchange. Development of the regional environmental Internet node comprising meta level information and environmental data on the Black Sea.	PCU	IC, NCs	\$60,000	[\$150,000]
	2.2.3 Updating and making available the Black Sea data bases and GIS to facilitate management, scientific, educational, public awareness and decision making purposes.	PCU (UNEP GRID)	NCs	\$80,000	
Total objective 2 (Including the costs of information specialist: US\$ 80,000)				<b>\$350,000</b>	

<b>Programme Objective 3: Supporting public involvement to facilitate the adoption of the Black Sea Strategic Action Plan</b>					
<i>Sub-objective</i>	<i>Description of Activities</i>	<i>Implementation Modality</i>	<i>Associated Regional Actors</i>	<i>Estimated costs to GEF</i>	<i>Est. associated donor contribution</i>
3.1 Public involvement in remedial activities coupled with targeted public awareness strategy.	3.1.1 Social assessment of specially affected populations due to the Black Sea issue.	PCU	NCs	\$30,000	\$256,000 (EU)
	3.1.2 Design of a public awareness programme for schools, local communities on issues such as wetland management, overfishing etc...	PCU	NCs, NGOs, COs	\$40,000	
	3.1.3 Consultations with local authorities, private groups and local NGOs, private investors and other stake holders to ensure that local investments in the design future investments and other activities.	PCU	NCs	see 4.1	
	3.1.4 Publication and dissemination of 2 Black Sea Newsletters (includes editing, translations into two languages).	PCU	NGOs	\$25,000	
	3.1.5 Supporting the regional Black Sea NGO Forum (7 meetings).	PCU	NGOs,	\$35,000	
	3.1.6 Supporting the implementation of concrete small scale environmental projects of regional/global significance.	PCU	NCs, COs, AC6 NGOs	\$90,000	
<b>Total Objective 3</b>				<b>\$220,000</b>	.

<b>Programme Objective 4: Preparing the financing of the Black Sea Strategic Action Plan</b>					
<i>Sub-objective</i>	<i>Description off Activities</i>	<i>Implementation Modality</i>	<i>Associated Regional Actors</i>	<i>Estimated costs to GEF</i>	<i>Estimated associated donor contribution</i>
4.1 A well developed portfolio of Black Sea environmental investments, reflecting national priorities for presentation to mid-1997 Donors' Conference	4.1.1. Contribute to the formulation of the National SAPs by review the investment-related conclusions and recommendations of the "Black Sea Environmental Priorities Study", and the Black Sea Strategic Action Plan to generate national consensus on top-priority investments. This should include the identification of key constraints to their successful financing (see 1.3 and 3.3)	National Governments-PCU - UNDP	NCs	\$100,000	
	4.1.2 A ministerial-level Conference aimed at achieving concrete commitments to high priority Black Sea issues followed by a donor pledging meeting.	PCU-UNDP	NCs	\$50,000	
4.2 Assessment of a mechanism to provide sustainable financial support to the Black Sea programme	4.2.1 Conduct a detailed national-level examination of the feasibility of adopting selected, commonly agreed economic instruments as sources of revenue for a Regional Black Sea Environmental Fund. Several potential instruments will be examined and will include consideration on legislative, fiscal and social impact.	PCU - UNDP	NCs	\$100,000	
	4.2.2 Produce a framework paper describing the structure, rules and Governance procedure of the proposed regional fund	EU Phare and Tacis	NCs		\$128,000 (EU)
	4.2. 3 National and regional workshops to review and agree upon issues associated with revenue sources, disbursement priorities and governance.	PCU - UNDP	NCs	\$125,000	
<b>Total Objective 4</b>				<b>\$375,000</b>	

<b>Black Sea Project Management</b>					
	<i>Items</i>	<i>Implementation Modality</i>	<i>Associated Regional Actors</i>	<i>Estimated costs to GEF</i>	<i>Estimated associated donor contribution</i>
5.1 Staffing	Full time senior project manager, technical adviser and local support staff	UN OPS	UNDP Country Office Turkey	\$360,000	\$170,000 (Gv. of Turkey and others)
5.2 Operations	Running costs (including communication, supply, management fee etc...)	id.	id.	\$220,000	
<b>Total</b>				<b>\$580,000</b>	



# ROMANIA

## CAPACITY BUILDING

### FOR GHG EMISSION REDUCTION THROUGH ENERGY EFFICIENCY

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<b>Project title:</b>	Capacity building for GHG Emission Reduction through Energy Efficiency
<b>GEF Focal Area:</b>	Climate Change
<b>Country Eligibility:</b>	<input type="checkbox"/> Eligible under financial mechanism for UNFCCC <input checked="" type="checkbox"/> Eligible under para. 9(b) GEF Instrument
<b>Total Project Costs:</b>	US\$ 6,478,000
<b>GEF Financing:</b>	US\$ 2,268,000
<b>Cost-sharing:</b>	EU PHARE Programme: US\$1,850,000*
<b>Parallel Financing:</b>	Fonds Français pour l'Environnement Mondial: US\$ 1,000,000*
<b>Government Financing:</b>	US\$ 1,160,000 (Government of Romania) US\$ 200,000 (RENEL)
<b>Implementing Agency:</b>	UNDP
<b>Executing Agency:</b>	Ministry of Industries & Romanian Energy & Romanian Energy Conservation Agency (ARCE)
<b>Estimated Starting Date:</b>	January 1996
<b>Project Duration:</b>	5 years
<b>GEF Preparation costs:</b>	PRIF (RER/94/G41) US\$25,000
<b>Associated non-GEF Project:</b>	ROM/94/002 Training Information and Dissemination Centre on Energy Efficiency Management.
(* see budget)	

#### 1. Background:

In 1991, CO<sub>2</sub> emissions amounted to 123 Mt. Per capita emissions were almost 10t in 1989, but they have fallen to 6t in 1993 due to the sharp decrease in industrial production. However, GHG emissions in Romania remain high compared to the level of economic activity with 2,120t of CO<sub>2</sub> per US\$M of GDP, compared for example to 665t in the European Union. The same year, Total Primary Energy Supply (TPES) was 48 mtoe, ranking Romania third in terms of consumption in Eastern Europe, behind Poland and the Czech Republic. The Romanian economy is indeed very energy intensive: its energy ratio is 1.7 toe/1,000 US\$ in 1991, as compared to 0.38 in OECD

countries. This high energy intensity is a combined effect of two factors:

- the structure of the economy with a large energy-intensive industrial sector; and
- the inefficient utilisation of energy in all economic sectors.

The industrial sector in particular is characterised by a high share of energy-intensive industries. In 1991, it contributed to 46.7% of the national GDP and accounted for 51.4% in the country final energy consumption (energy sector not included). Final energy consumption in the industrial sector was 17.1 mtoe in that year. Chemicals, iron and steel and machinery together accounting for 50%. The energy sector and combustion of fuels in industry are in fact the main sources of GHG (CO<sub>2</sub>) emission, with 44% and 37% of the country's emissions, respectively.

Environmental policy is the responsibility of the Ministry of Water, Forests and Environmental Protection (MoE). The MoE has three departments dealing with the above subjects. With its research institute it operates 233 monitoring stations for air pollution throughout the country. The Department also has 40 district agencies in charge of inspection, issuing permits, analysis, monitoring and data collection. The Ministry of Health operates 86 air pollution monitoring sites in cooperation with the MoE. The district agencies require significant investment in control and monitoring equipment to cover the 41 counties of Romania, each of which includes between 2,000 and 5,000 point sources of pollution. Further work on the implementation of the FCCC will increase the cooperation between these various national institutions.

## **2. Context:**

The Framework Convention on Climate Change was signed by the Government of Romania at the Rio Summit where the Minister of Environment announced that Romania expected that CO<sub>2</sub> emissions would, in the year 2000, be below those of 1989. Romania ratified the FCCC in June 1994 (Law No.24) and a "First National Communications Concerning the National Process of Applying the Provisions of the Framework Convention on Climatic Change" was submitted to the Secretariat of the Convention in January 1995. In accordance with the global problem of climate change, the Ministry of Waters, Forests and Environmental Protection is integrating the strategy on climate change into the general strategy of environmental protection in Romania. The Government of Romania has implemented several strategic steps to support the Framework Convention. These are:

- adoption of regulations on air pollution emissions for each sector of the economy;
- the establishment of the National Commission for Climate Change;
- the establishment of a greenhouse gas inventory in accordance with methodologies set out by IPCC and adopted by INC of UNFCCC, for different sectors of the economy;
- preparation of a national monitoring system for air pollution (including GHG);
- identification of the sectors in Romania most vulnerable to climate change;
- mitigation options for each sector;

- public information with a view to broadening and strengthening the public acceptance of climate change strategy;
- the National Environmental Research programme will contain aspects for Global Air pollution and Climate Change;
- promotion of cooperation with other countries to improve the Convention; and
- negotiations on the development of specific targets for GHG emission reduction.

In the context of a very energy-intensive economy needing to comply with its international commitments, the Government of Romania made the decision to promote energy efficiency policies.

### **3. Project Objectives:**

Experience shows that even if there is a potential for energy efficiency improvements which are financially viable, and even if credit lines are available, a considerable share of this potential is not realized because information, policy measures, local expertise are lacking. These barriers are particularly important in small and medium sized industries, and among commercial and residential energy users. This project is designed to help overcome these barriers. It will assist Romania in reducing the long-term growth of GHG emissions from district heating, power generation plants and from consumption of fossil fuel sources in other sectors. The overall objective of this project is developing self-sustaining national capability for the continuous improvement of energy efficiency. This objective is in line with the national strategy proposed by the Government for the reduction of GHG emissions. It is also consistent with Government policies to improve energy efficiency, sustain economic development and the move towards a market-oriented economy. The overall objective will be achieved through various activities which can be classified in two themes:

- (i) Improving capacity to implement local energy strategies and programmes leading to continuous improvement in energy efficiency; and
- (ii) Demonstrating and replicating specific energy saving technologies, with the emphasis firmly on ensuring their dissemination.

The first involves increasing the capacity to design and implement rational energy management strategies at municipal and industrial levels. This will effect savings in energy, and hence reduction in GHG emissions, through the implementation of modern management information systems and no-cost and low-cost measures. In addition, it will increase the flow of cost-effective projects and facilitate the financial evaluation of these projects so that they can be packaged for investment from financial institutions.

The second theme involves demonstrating a number of energy saving technologies, namely; improved combustion efficiency, energy efficient municipal lighting, improved building insulation, reducing electricity demand in buildings, industrial heat recovery and electric motor

controls. The emphasis in this theme will be on rapid demonstration of results and closely targeted replication with project managers charged with responsibility for finding replication sites, preparing financial cases for outside lenders, and project management of implementation.

In order to focus the project tightly on quantifiable energy savings and hence reduction in GHG emission, the two themes will be implemented simultaneously within a selected geographical area to be designated an Energy Action Area. In this way all components of the project will be able to feed off each other and become synergistic. The objective will be to ensure maximum involvement and participation from all groups within the selected area.

#### **4. Project Description:**

The project consists of nine components of three different types, which were discussed and agreed upon with relevant authorities in Romania and funding partners:

- a) Five components involving demonstration and transfer of technologies (components 4, 5, 6, 7, and 8).
- b) Three components focusing on training and information disseminations (components 1, 2 and 3).
- c) The last component (component 9) involves the organization of an overall **Management and Coordination Unit. This coordination unit will function in joint team.** Central coordination is necessary in order to integrate successfully the distinct elements of this project and to ensure coherent and timely completion of various elements.

Five alternative sites have been identified from which the first pilot Energy Action Area will be selected. Final selection of the site will take place during a meeting organized in September 1995 with national authorities and funding partners. Summary information with comments about each site is given in Annex II. The establishment of a first Energy Action Area will take 18 months. After that, the project will focus on replicating this programme in other areas and aim to have established at least 20 Energy Action Areas within the five year programme. This is an ambitious but achievable target, as much emphasis will be placed during the pilot Area project on training local Agencies, so that they can take over the management of the programme in other areas.

The following section discusses each component of the proposed project. The discussion centres on the objectives of the component, a description of the activity, a discussion of the transactions barriers preventing the component from being implemented in the absence of the project, the anticipated outcome of the component, and finally, the local partners who will be involved in the component.

**Component 1 Improving energy management capacity (for selected small and medium enterprises) Total cost: US\$ 420 000; Proposed GEF funding: US\$ 320 000**

*Objectives:*

- To implement energy management information systems in industry and the public sector;
- To implement no- and low-cost savings opportunities;
- To train enterprise, ARCE and consultancy staff in energy management information systems; energy saving techniques; and financial evaluation; and
- To identify investment opportunities and prepare financial evaluations for project funding from banks.

*Description:* A major constraint on improving energy efficiency in Romania is the lack of experience in establishing management information systems and using such systems to identify and implement no-cost and low-cost measures. This component of the project aims to:

- Increase know-how and understanding of energy management information systems, energy saving techniques and financial evaluation;
- Implement energy management information systems, beginning with the largest enterprises and cascading out to smaller enterprises; and
- Use management information systems and consultancy to identify higher cost opportunities and prepare them for financing by outside agencies and local banks.

The approach used will be:

- to provide high level awareness training for senior managers in enterprises (one-day seminars) to create demand for energy management and provide operational level training in energy management information systems, energy conservation techniques and financial evaluation and provide training for the local ARCE office in these areas;
- to provide training for local consultants and consulting groups in these areas;
- to use local and international technical experts to implement energy management information systems in enterprises and assist in implementation of no- and low-cost measures; and
- to assist in preparing cost-effective programmes and projects.

As in all cases throughout this project, priority in the first phase will be given to those small and medium energy users with the largest potential energy savings, provided that these energy users demonstrate potential economic and fiscal solvency.

*Transaction Barriers:* Small and medium sized enterprises have little or no information about energy management systems and little ability, therefore, to make rational energy use plans and decisions. They also have little familiarity with the process of preparing loan applications for energy efficient investments. This component will overcome this hurdle by assisting as many of

the firms in the Energy Action Area in establishing management information systems and providing information to assist them in carrying out no and low-cost energy investments. It will also help them to prepare more expensive, but cost-effective, investments for financing. Through implementing this component in the first and subsequent action areas, a useful network of information and investment support will be created to assist these small and medium firms that frequently do not receive adequate attention. It is clear from experience to date that such activities would not take place without the assistance of this project.

*Expected Outcome:*

- Energy management systems will be established in at least 15 of the enterprises in the first Energy Action Area;
- All no- and low-cost energy saving opportunities will be implemented in at least those 15 firms involved in the MIS Programme in the first Energy Action Area;
- Those large-scale energy saving opportunities which are identified in the large firms in the first Energy Action Area will be analyzed and subsequently presented for financing.

*Local partners:* ARCE, TIDCEM, local consultants

**Component 2 :        Development of Local Energy Strategy**  
**(Total costs: US\$ 350 000; proposed GEF funding US\$ None)**

*Objectives:*

- To develop local capability amongst local decision makers, particularly in local government, to develop energy strategies and take energy related decisions;
- To develop local capability to produce sectoral energy utilisation studies with assessment of energy efficiency and GHG emissions, potential savings and abatement of GHG emissions through energy conservation and renewable energy strategies; and
- To extend the activities of the Energy Cities Network.

*Description:* This action is mainly concerned with local training on energy demand analysis, integrated resource planning and forecasting methods, as well as defining local energy strategies on both the demand and supply sides and energy-related decision making. As such, it builds directly upon the work already started by TIDCEM and the ORASE-ENERGIE energy cities network. Because it should have significant local benefits and is necessary for rational energy development, no GEF resources are requested under this task.

*Transaction Barriers:* Local decision makers (at the municipal level) typically have little or no understanding of integrated energy concerns and decision making. As a result, many of the decisions are uninformed by a perspective which views energy supply and demand as part of an integrated whole. This component seeks to train local-level decision makers in these perspectives and tools, making a systematic approach to energy decisions within the Energy Action Areas out of previously piecemeal efforts.

*Outcome:*

- The regional or local authorities will have the capability to define energy utilisation efficiency, make reliable energy forecasting models, and use those models to make decisions aimed at reduction of GHG emissions; and
- These activities will be replicated in the subsequent Energy Action Areas.

*Local partners:* TIDCEM, ARCE, ORASE-ENERGIE and local consultants.

**Component 3 :        General information dissemination**  
**(Total costs: US\$ 400 000; proposed GEF funding US\$ 400 000)**

*Objectives:*

- To develop clear, accessible, concise and practical information for specific target audiences;
- To develop information based upon project demonstrations for use in replicating project activities; and
- To use existing information channels to disseminate information, particularly for those activities of interest for the project.

*Description:* The Programme Coordination Unit will work with ARCE, the Ecologist Youth or Romania, TIDCEM and local NGOs to develop this component. They will disseminate information on energy usage, the need for energy efficiency and what actions can be taken to manage energy effectively to various target audiences. The information will be made relevant to the local Energy Action Area and support its development. The targets include municipal councils, large industrial consumers, small and medium consumers, the general public, trade unions, associations and school children.

The overall objective of this component will be to involve all groups of society within the Area and to build upon existing information dissemination systems. There is a need to develop information which includes an assessment of the experiences of the demonstration efforts funded as part of this programme, so that target beneficiaries in subsequent Action Areas can benefit from the experiences of these demonstrations. This activity will also include awareness raising, training, and public events. Targeting children will help to change young people's perceptions of the energy problems facing Romania, which can in itself contribute to change in the long term. This component will build upon proposals made by Non-Governmental Organizations within Romania and will include:

- Publishing information packages, including energy booklets;
- Energy competitions for different age groups;
- Energy exhibitions aimed at industrialists, engineers, school children and the public;

- Contributions to school curriculum; and
- Use of local mass media.

This component will build upon pilot projects initiated by the European Union's PHARE Energy programme (the development programme for Central and Eastern Europe). After the successful completion of this component in the pilot Energy Action Area, a project officer will be appointed to assist dissemination of the project ideas to other municipalities as well as to make better use of the information gained through this project.

*Transactions Barriers:* There are very few good Romanian examples of improving the efficiency of energy service delivery as well too little an awareness of how energy needs can be met through improved management, better technology, and approaching energy from a service-delivery perspective. There is also little information and awareness about the potential for enhanced energy efficiency. As much of this project focuses on energy use in industrial applications, this component first will seek to provide useful information about the demonstrations carried out as part of this project. The audience in this first case will be other industrial end-users in both this Energy Action Area and other Energy Action Areas. In addition, there will be public awareness elements attempting to inform consumers, educators, students and the general public about using increased energy efficiency to improve the quality of life and reduce GHG emissions.

*Outcome:*

- Involvement of the main local groups in the Energy Action Area;
- Development of appropriate information to expansion of Energy Action Area programme; and
- Use of all existing information channels to provide energy information.

*Local partners:* ARCE, The Ecologist Youth of Romania, TIDCEM

**Component 4 : Combustion efficiency service**  
**(Total costs: US\$ 260,000; proposed GEF funding: US\$ 60,000).**

*Objectives:*

- To provide technical assistance in analyzing the efficiency of combustion systems employed by enterprises in the Energy Action Area;
- To provide a combustion efficiency service to other Energy Action Areas (medium term);
- To provide a combustion efficiency service to top 200 fuel users (excluding power stations) in the country (long term).

*Description:* The experience of ARCE local branches and international consultants carrying out energy audits has shown that average combustion efficiencies in Romania are very low, typically 65% to 70%, as opposed to 80% plus achieved in advanced economies. This inefficiency is a



major contributor to the emission of carbon dioxide, as well as other pollutants such as sulphur dioxide. This component will establish a team charged with the objective of providing a combustion efficiency service for the enterprises in the Energy Action Area. This will service local ARCE staff as well as local consultants. The combustion efficiency service will deliver technical assistance to local enterprises supporting those enterprises in their effort to analyze the efficiency of on-site combustion systems and to make cost effective improvements. The service will be offered to enterprises in the area (initially at no costs), starting with the largest and the most economically viable entities. It will offer the following:

- combustion efficiency spot checks;
- adjustments of burners to provide optimum combustion;
- regular checks (weekly, monthly depending on size of burners);
- training for enterprise staff in larger enterprises;
- identify opportunities for investment such as automation of combustion controls; and
- provide demonstration investment in efficient combustion equipment such as burner automation.

An improvement in average combustion efficiency of 5 to 10 percentage points would make a major contribution to energy efficiency and would simultaneously reduce GHG emission. This should easily be achievable using combustion analysis equipment and regular monitoring. Additional gains will be made by automation of combustion.

The team trained in the pilot Energy Action Area will become the core of the national unit that will aim to provide the service to the top 200 fuel burning sites (excluding power stations) in the country. This core team should operate in the following manner: it should set standards for combustion efficiency testing, provide training and accredit consultants to carry out testing. At first, the service will be supported by GEF funds, but there will be an explicit objective of becoming self-supporting within two years. The benefits from regular combustion testing far outweigh the cost; therefore enterprises should pay for the service. Early in the lifetime of this activity, efforts will be made to ensure that this project component becomes fiscally sustainable through charging clients for the service produced. In this way, and through accreditation, rather than direct service provision, this activity will promote the growth of the market for energy efficiency services and products.

*Transaction Barriers:* To date, this activity has not been carried out for three reasons. First, there has not been a cadre of trained individuals familiar with modern combustion optimization techniques. Second, the equipment required for carrying out these optimizations is not available locally and will require some demonstration. Third, until recently, energy prices were subsidized so heavily that incentives for undertaking this type of investment were limited. With the reversion to non-subsidized energy prices, this latter obstacle has been removed. This component is designed to obtain the requisite equipment and train a cadre of professionals to utilize it to keep boilers in the Energy Action Area constantly tuned-up. There will also be demonstrations of automated controls, automated oxygen trim, multi-stage burners, and

condensing low NO<sub>x</sub> burners. After the start-up of the combustion efficiency service, this agency should be financially independent, as client companies will be required to pay for the services provided.

*Outcome:*

- Improved combustion in all enterprises in the Energy Action Area (short term);
- Improved combustion efficiency in other Energy Action Areas (medium term);
- Improved combustion in top 200 fuel users in Romania (long term);
- Identified and evaluated investment opportunities in improved combustion equipment and automation; and
- Demonstration of a number of techniques for improved combustion efficiency.

*Local partners:* ARCE, local consultants, ICEMENERG.

**Component 5: Heat recovery in industry**

(Total costs: US\$ 680,000; proposed GEF funding: US\$ 280,000)

*Objectives:*

- To demonstrate key heat recovery techniques;
- To disseminate information; and
- To prepare 50 similar projects for investment by others.

*Description:* This component addresses the large potential for heat recovery in industry. Heat recovery is a generic term that covers numerous technologies such as boiler flue heat recovery, process heat recovery through various types of heat exchangers, boiler blow-down heat recovery, ceramic recuperative burners, heat-pipe boiler economisers, building ventilation heat recovery, spray recuperators, and waste-heat boilers. Ceramic recuperative burners served as the subject of a large government programme between 1986 and 1989 aimed at saving 0.5 billion cm<sup>3</sup> of natural gas. However, many of these installations are not performing at anything like the optimum level.

An opportunity exists to examine these previous installations, rehabilitate non-functional installations and demonstrate and disseminate other heat recovery applications. The selection for particular technologies within this component will be driven by the results of energy management audits which will identify the major opportunities. Then the programme would:

- Select demonstration projects;
- Install pre-investment monitoring;
- Implement the projects;
- Carry out post investment monitoring;
- Disseminate the results in a manner aimed at getting maximum replication.

*Transaction Barriers:* Although many studies have shown a large potential for cost-effective heat

recovery systems in industry, few investments in these technologies have been forthcoming. Non-price barriers to market penetration have slowed the deployment of these systems. These non-market barriers, particularly institutional obstacles, risk and information gaps, have slowed the deployment of these systems. In addition, the controlled energy prices, prevalent until recently, may have removed many incentives for these investments. Thus, non-market pricing policies may have contributed to the failure of earlier efforts in this area. The information barriers will be overcome by training and information dissemination. The risk and institutional objections to these investments will be surmounted through carefully monitored demonstrations, and metered billing will ensure that the incentives to use energy efficiently are present and that the investments do save energy.

*Outcome:*

- Implementation of key heat recovery techniques in the first Energy Action Areas; and
- Implementation of 50 similar projects in other Energy Action Areas.

*Local partners:* ARCE, local consultants, ICEMENERG

**Component 6: Electric motor controls (Total costs: US\$ 850 000;  
Proposed GEF US\$ 150 000)**

*Objectives:*

- To identify industrial and municipal consumers within the first Energy Action Area with large electric motors;
- To provide technical assistance for rehabilitation of between 5 and 8 enterprises as a demonstration project;
- To demonstrate the cost-benefit of installing Variable Speed Drives (VSD) motor controls;
- To implement motor controllers in all viable sites within the first Energy Action Area;
- To implement motor controllers at all viable sites within the subsequent Energy Action Areas.

*Description:* Modern, variable speed electric motor load controllers can significantly improve the efficiency of large electric motors in industrial applications. These devices are technically feasible and cost-effective at today's energy prices in many applications. The application of motor controllers such as Variable Speed Drives can reduce the energy used by electric motors for pumps, fans, compressors and machinery by up to 50% by electronically adjusting power input to the required load. If implemented industry wide, this project alone could reduce the total electricity end-use by 5%. In OECD countries, motor controllers are now standard on large installations and beginning to spread into smaller motors. Expected paybacks are between 2 and 4 years. The Ministry of Industry is already promoting the use of VSDs across industry. This programme will enhance what is now a piece-meal approach. This component will assist 5-8 of the largest users of electric motor or water pump users to retrofit existing plants with variable

speed drives in order to demonstrate and gain experience with these devices.

*Transaction Barriers:* At present, variable speed controllers for electric motors are unfamiliar to Romanian industry. While they may appear to be good ideas on paper, the industrial engineering staff has little knowledge or experience with these controllers. This component will focus first on demonstrating that these devices work and are profitable in the first Energy Action Area before implementing a larger programme to disseminate them throughout other Energy Action Areas. A critical element to these efforts will be the training of staff in which types of controllers will work in which applications, and then how they can be financed effectively.

*Outcome:*

- All viable opportunities for motor controllers in Energy Action Area implemented; and
- Accelerated uptake of VSD technology nationwide.

*Local partners:* ARCE, ICEMENERG

**Component 7: Efficient municipal lighting (Total costs: US\$ 650 000; proposed GEF funding: US\$ 100 000)**

*Objectives:*

- To demonstrate the use of energy efficient municipal lighting;
- To replicate the technology in 50 other sites within 5 years;
- To contribute towards creating a market for locally produced energy efficient lighting; and
- To disseminate the results to all municipalities.

*Description:* This component aims to demonstrate the application of modern energy-efficient lighting in the municipal lighting sector. A number of municipalities, including Hunedoara County, Mare Mures County and Targu Mures County have expressed an interest in investing in energy-efficient lighting during the refurbishment of existing schemes but additional costs are a constraint. This component will select one of the schemes already identified in the first Energy Action Area and provide additional funding from within this project so as to allow the use of energy-efficient lamps and lighting controls. Following the implementation stage, a project officer will be appointed to disseminate information and project manage further installations in other areas, and design financial schemes to enable municipalities to finance these initiatives. Such projects are likely to be attractive to lenders because the savings are very predictable. The component will also examine ways in which the uptake of energy efficient lighting can be accelerated, e.g. with shared savings contracts and revolving funds.

*Transaction Barriers:* There are two types of transaction barriers preventing widespread use of more efficient municipal lighting. The first has to do with the lack of familiarity with the

alternative lighting options, which have never been demonstrated in Romania. The second has to do with the difficulties which municipalities face in financing those lighting investments. This component will immediately help overcome this first obstacle in the Energy Action Area by demonstrating the more efficient lighting element. To overcome the larger barrier to implementation, that of the inability of municipalities to finance these investments, project analysts will focus attention on different financing alternatives for municipalities, whether through specific lines of credit, national or internationally-seeded revolving funds, or the issuing of municipal bonds. Thus, both obstacles to the widespread implementation of this option will be overcome through this project component.

*Outcome:*

- One demonstration project in pilot Energy Action Area; and
- 50 similar schemes formulated and presented to lenders for financing (longer term).

*Local partners:* RENEL, ARCE, ICEMENERG

**Component 8: District heating systems and buildings insulation**

**Total costs: US\$ 1,530,000; proposed GEF funding: US\$ 130 000**

*Objectives:*

- To demonstrate an original approach for the thermal rehabilitation of a district heating network and the end-user dwelling;
- To improve the comfort and the living conditions of the end-user customers of the heating network;
- To replicate the approach in other Energy Action Areas; and
- Prepare and distribute a training manual on district heating management to all municipalities targeting mayors and local counsellors.

**Description:** A large proportion of the energy losses in Romania are concerned with the provision of heat to buildings and industry from district heating networks operated by RADETs, local district heating companies owned by the local authorities. Some of the heat delivered by the networks comes from power stations, some from industry and some from Heat Only Boilers. In all cases the systems are very inefficient because of:

- Large transmission and distribution losses caused by long distances involved and poor or absent insulation of pipe work;
- Old and inefficient boilers and heat exchangers;
- Corrosion and fouling due to lack of water treatment;
- Water losses from primary and secondary loops;
- Poor thermal structure of buildings leading to high end-user consumption;
- Problems with fuel supply, particularly with gas pressure in winter; and
- Lack of modern control systems and management techniques.

As well as high energy use, this leads to lack of comfort for the end-users and the need to spend a high proportion of income on purchasing heat. Many of the district heating networks cannot provide heat or domestic hot water constantly throughout the winter and supply is often limited to ten or twelve hours a day. This leads to very low temperatures (as low as -10°C) inside dwellings at times of extreme ambient conditions.

The project will demonstrate an integrated approach to reducing energy losses in district heating schemes. The selected approach will improve both the system efficiency and the end-user efficiency through better insulation and controlling ventilation, as well as training of residents. The emphasis will be on lower cost solutions that will be more accessible to other RADETS and communities. A number of institutional issues, such as the inability of RADETS to invest in privately owned apartments, will also need to be addressed.

*Transaction Barriers:* The transaction barriers in the case of improving district heating can be seen as a lack of familiarity with newer, more efficient approaches to the supply of heat to district networks, risk associated with these technologies never having been demonstrated locally, and a difficulty of RADETS to finance such innovative investments. By focusing on demonstrating the new techniques, this component will provide a basis for widespread local demonstration which can serve as the basis for training. Project analysts will then begin to address the financing bottle necks in help RADETS obtain adequate financing to replicate the demonstration investments.

*Outcome:*

- A demonstration project within the first Energy Action Area with clearly monitored results; and
- A programme to disseminate the project results and assist other RADETS to design and implement similar projects.

*Local partners:* TIDCEM, other NGOs, RADETS, ARCE, municipalities of the ORASE-ENERGIE network, local consultants.

### **Component 9: Project Management and Coordination**

**Total costs: US\$ 985,000; Proposed GEF funding: US\$ 585,000)**

The successful implementation will require strengthening of ARCE with the recruitment of staff dedicated to this project. A chief project manager will be recruited internationally. Initially, the Chief Project Manager will work with experts experienced in managing large, integrated energy management programmes and associated activities. Individual components of the project will have their own project officers whose responsibilities will include day-to-day management of the implementation of their component, and subsequent replication. Emphasis in the first year will be on training local staff so that foreign involvement may be reduced over the duration of the

project. It is proposed that a chief project manager will be appointed. He will draw up Terms of Reference for international and local staff to manage each component of the overall workplan. Each component shall have a project manager and team leader reporting to the chief project manager. Management consultants, with extensive experience of managing large energy projects with the emphasis on quantifiable results will be appointed to draw up a detailed programme for **each component, and then manage the implementation of that programme.** Within each component, the project manager shall be expected to achieve explicit targets for the replication of projects. Each component's international consultancy team shall also be expected to train local consultants (as well as ARCE and other staff) in order to build a self-sustaining capacity to run the project. The Chief Project Manager will focus his efforts in obtaining concrete replicable results. The component managers will be hired on performance-based contracts in order to achieve this goal.

In addition, the project management team will include a financial/economic analyst whose prime responsibility will be to focus on the "bankability" of the follow-on investment projects (the position is funded in the budget for 2 years). It is vital that the chief project managers work to motivate the end-users to invest. This may be done in a number of ways; fiscal means, subsidised or free equipment for a period e.g. low energy lamps, publicity, awards, league tables of performance, and legal and regulatory requirements e.g. minimum standards of efficiency. It is essential that the overall project managers work with ARCE and other institutions (e.g. research institutes, RENEL, ROMGAZ as well as the EU PHARE energy PMU), to put in place an appropriate framework of incentives to ensure project success.

UNOPS will be responsible for the selection of foreign assistance in collaboration with ARCE. Office space for project activities will be contributed by the Ministry of Industries (MoI) through ARCE and its Regional Branches.

Much of the project management at a local level will be carried out by existing Romanian organisations such as the local Energy Service Companies (ESCOs) and TIDCEM. TIDCEM will have overall responsibility for all training issues. The co-operating agency will be UNOPS (Office for Project Services).

## **5. Institutional Framework and Project Implementation**

The Romanian Agency for Energy Conservation (ARCE) will be the executing agency for the project with responsibility for project management, under the auspices of the Ministry of Industries. Funding partners will meet in a Financing Sub-Group where they will be informed of project progress by the Ministry of Industries and will make overall project management decisions.

A National Steering Group will be established to oversee the whole project and will include representatives from institutions such as the Ministry of Industry, State Secretariat for Economic

Reform, General Directorate for Energy, Petroleum and Gas, Romanian Energy, Conservation Agency, Ministry of Finance, Ministry of Public Works and Territory, Planning, Ministry of Environment, Water and Forestry, RENEL, ROMGAZ, State, Ownership Fund, Association of Industrial Energy Consumers, TIDCEM, UNDP, European Union, the French GEF, the European Bank for Reconstruction and Development and the World Bank.

In the future, each Energy Action Area will also have a local Steering Group to ensure local management and involvement. This will likely be made up of representatives from the municipality involved, local industry, trade unions, NGOs, the local ARCE Branch and TIDCEM. (See Component 9 above for details.)

## **6. Consultative and Participatory Processes**

In 1993, a UNDDSMS Adviser produced a first study on Energy Efficiency in Romania and gave advice on the areas in which opportunities for energy conservation could be found. As a continuation of this evaluation, in May 1994, at the request of MoI, the same expert produced advice for the formulation of a project to be submitted to the GEF and prepared a draft project brief in collaboration with ARCE. In July 1994, \$400,000 were granted to UNDP by the GEF Executive Council as a Project Preparation Facility (pilot phase) for the preparation of an energy efficiency strategy. This funding facility was partially used for Romania in order to further develop this project. A first mission took place in March 1995. It was followed by regular discussions between the UNDP, the national authorities, various stakeholders (NGOs) and potential funders.

### *NGOs consultation:*

The International Institute for Energy Conservation (Eastern Europe office in London)  
The Ecologist Youth of Romania (Bucharest), the Climate Action Network Central and Eastern Europe (Zagreb), the European Association for the Conservation of Energy (London) and the International Institute for Energy Conservation (London) were consulted on the first version of this project and will be involved in the future, in particular in component 3 under Information Dissemination.

## **7. Lessons Learned and Technical Reviews**

In October 1994, the Ministry of Industry forwarded its approval of the concept paper based on the draft project brief. This version is a revised and re-worked version of the original draft. During its preparation, consultation meetings have been held with ARCE, RENEL, the Ministry of the Environment, ICEMENERG, TIDCEM, the World Bank, EBRD, the EU/PHARE unit in Bucharest, the Caisse Française de Développement/Fonds Français pour l'Environnement Mondial and several NGOs. Their views are fully reflected in this new proposal as well as the comments made by the STAP Technical Reviewers in December 1994 and in July 1995.



## **8. Monitoring and Evaluation:**

A system of tri-partite reviews will take place according to UNDP rules to which a technical expert will be added. In addition, the first Energy Action Area will be fully evaluated after 18 months by an Independent Group of Technical Experts. The recommendations made by the experts will be communicated immediately and project activities will be adjusted accordingly. A budget line of US\$ 75,000 has been added to the project to compensate for these costs.

## **9. Sustainability of Project Benefits:**

### *Financial sustainability:*

Some components of the project will become self-supporting, namely the combustion analysis service and the building of energy management capacity. Energy prices in Romania have been raised to market levels (see Section 12) and so there is considerable financial advantage in organisations implementing energy management and energy conservation investment programmes. The project aims to significantly improve the capacity of Romanian organisations to undertake sustainable energy efficiency programmes, as well as to make a significant direct impact on energy efficiency and hence reduction of GHG emissions. Finally, the most significant of the recent developments for the success of this GEF project is the creation of an Energy Efficiency Tax on (heat and electricity) by the Ministry of Industry. It is expected to provide US\$ 7 million per year for infrastructure investment in energy project, out of which 5% will be available to finance energy efficiency investments. An Ordinance has now been passed which will establish this funding facility in August 1995. This will provide an important additional source of finance for viable energy efficiency projects identified and evaluated through the GEF project activities.

### *Funding Partners Activities:*

Bilateral and multilateral donor activities in the field of energy efficiency started in Romania in 1990. Bilateral co-operation with France started in 1990. Discussions between the Bucharest Polytechnic University and the Romanian MoI, together with their counterparts in France, ADEME and Ecole des Mines, led to the creation of ARCE in 1991. USAID started work in Romania in 1991 under its emergency energy saving programme which was applied to several countries in Eastern and Central Europe. The PHARE programme of the European Union has established an Energy Project management Unit within the MoI. This has funded an energy efficiency strategy which made recommendations regarding institutional, regulatory and financing issues as well as a number of energy saving projects in the industrial and building sectors. Another important PHARE project on twinning is foreseen to be implemented during 1995 with the objective of strengthening co-operation between a) executives and officials of the administration b) energy agencies in the EU and c) energy service companies. The GEF project proposals were discussed with the PHARE Energy PMU at all stages of formulation and close links have been maintained. The PHARE programme has agreed to contribute to 6 components of the overall project, namely components 1, 2, 6, 7, 8 and 9.

The European Bank of Reconstruction and Development (EBRD) has carried out a study on the feasibility of creating a financing scheme specially dedicated to financing energy efficiency projects in industry. EBRD is also undertaking work in the district heating sector. Discussions were held with EBRD during the formulation of this GEF project proposal. It is expected that the GEF project will act as catalyst to create a stream of bankable projects that will be of interest to EBRD and other financial institutions.

The World Bank is preparing a major programme for the Rehabilitation and Modernisation of the Power Sector. This includes improvements of energy efficiency through the improvement of fuel utilisation in power plants. The GEF project will focus on end use efficiency outside the power plants and so the GEF project is seen as complementary by the Romanian authorities.

Following agreement between the Ministry of Finance and the European Investment Bank, a credit line has been established for projects aimed at increasing the competitiveness of Romanian industry. Energy efficiency projects are eligible for support under this credit line. The GEF project will catalyse a stream of projects for possible support under this scheme.

Other bilateral co-operation programmes have been undertaken e.g. the Japanese Agency JICA has provided assistance in energy efficiency in the main iron and steel complex, SIDEX.

#### *Incentive and Regulatory System:*

Romania was the first Central and Eastern European country to designate a specialised institution dedicated to energy conservation. The Romanian Energy Conservation Agency (ARCE) was created in April 1991, under the umbrella of the MoI, with the objective of assisting consumers in their efforts to reduce energy consumption and improve energy efficiency. The main advantage of ARCE is its regional structure with 16 branches.

A Law on Energy Efficiency is in the process of passing through parliament. Its principal objective is to give a legal framework to a national energy conservation policy and the strategy produced by ARCE. The Law addresses the following issues: the establishment of an energy efficiency fund, the definition of the duties and responsibilities of the various ministries, consumers and energy industries. Some provisions under this Law will be beneficial to the development of this project such as the institutionalisation of energy efficiency at the national level through the creation of a National Energy Efficiency Council and the strengthening of ARCE in terms of independence, flexibility and expertise;

#### *Stakeholder commitments:*

A Training Information and Dissemination Centre on Energy Management (TIDCEM) has been established with funding from UNDP and foreign utilities. This Centre is based within the Bucharest Polytechnic University. It is designed to improve the capacity of decision-makers at different levels, making them more sensitive to energy conservation, efficiency and environmental protection. The Project is co-operating closely with the UNESCO Chair in

Energy Efficiency and Environment at the Bucharest Polytechnic University. The GEF project is supported by TIDCEM and will use TIDCEM for many training and information activities. This Centre is financed through UNDP with Dutch and recent French co-financing (Project ROM/94/002).

The newly created Energy City network: ORASE-ENERGIE will serve as a very important tool for the dissemination in Romania of the approach and project results. More than 40 municipalities have already agreed to take part in this network in which the main objective is to exchange information and experience. Dissemination to other Eastern and Central European countries will be possible through the regional programmes of PHARE and through the Energy Efficiency 2000 programme of the United Nations ECE. Each component of the project is detailed in the following section.

## **10. Rationale for GEF Support**

This project is fully consistent with two sections of the "Guidance for Programming GEF Resources in 1995 adopted by the GEF Council in November 1995. Section 16 on Technology Transfer has particular relevance to the components 4, 5, 6, 7 and 8. Components 1, 2 and 3 are particularly relevant for section 20 on Energy Conservation and Energy Efficiency.

The GEF contribution requested is \$US 2,268,000. The project funds are primarily devoted to the enhancement of the Governmental effort in favour of energy efficiency with particular emphasis on capacity building to overcome techno-economic and managerial barriers and creating self-supporting activities. The project will create greater energy efficiency and facilitate measurable reductions of GHG emissions. The project is a national priority within the context of restructuring and privatisation of the industrial sector. The institutional and technological assistance provided by the project will be an important step toward creating an attractive climate for future investments in the Romanian economy. The project itself will lead to investment in energy efficiency projects by other institutions.

A similar investment for global benefits cannot be justified in the current economic context by the Government of Romania. Through the GEF funding, combined with the Governmental and other donors involvement, Romania will benefit from lower energy intensity, improved environment - including bringing a substantial contribution to the implementation of the FCCC -and a more productive and competitive industrial sector. The proposed project also meets the following development criteria, in addition to falling within the global environmental protection priority area. The GEF project:

- contributes to human welfare through sustainable development
- is innovative and internationally replicable
- is financially sustainable after initial GEF support with involvement of local financial institutions, international financial institutions and other donors

- gives a new dynamic and environmental dimension to the on-going Romanian schemes
- develops institutional capability and trains personnel
- has a firm scientific and technical basis
- fits within the context of existing national and regional programmes
- involves local participation and collaboration
- includes studies that will lead to a better understanding of energy use patterns in Romania
- will have quantifiable result within the project timetable

## 11. Incremental Costs

In the absence of GEF support, ARCE's programme would continue much as it has over the past three years. ARCE would not support the kind of capacity building activity outlined above in the absence of GEF funding. The wide spread dissemination of practical energy efficiency information would diffuse Romania energy users at a much slower rate without these activities. However, ARCE would continue to operate and energy savings could be assumed to occur, albeit at a slower rate than over the past three years when the most productive efficiency investments were made. These activities are assigned no quantitative figures, and are briefly described here. But, the transition to these "horizontal" activities, which are considered critical to the commercialization of energy efficiency in Romania would not be financed by the Romanian Government acting alone. Disseminating these techniques throughout the economy, would occur only very slowly. All the components are to be carried out in one Energy Action Area so that they can interact synergistically, eg general information campaign (component 3) will also contribute to raising the understanding and likelihood of effective action of energy management of senior managers, the issue being addressed by Component 1. (See Annex 1).

## 12. Issues, Actions and Risks

The MoF aims to ensure that end-use prices are close to reference market prices at official exchange rates. In April 1992, energy prices were raised to the reference market levels. Energy prices are calculated according to the interbank exchange rate. Consumers subsidies were eliminated in mid 1993, as scheduled under agreement with the IMF and World Bank. The exception is heating for the residential sector where a small subsidy remains. Current energy prices for industrial consumers are US\$ 80/toe for natural gas and US\$ 0.065/kWh for electricity, remaining slightly below the average for OECD countries. Further increases are expected in 1995.

A Law for Electric and Heat Energy Use is in preparation with the main objective being to regulate this sector. It should include the establishment of a regulatory body in charge of pricing, regulating relationships between RENEL, the State and potential new independent producers, as well as the development of programmes such as Demand Side Management. Other specific laws are in preparation for the oil and mining sectors. These legislative acts, including the Energy Efficiency Law, together with other new regulations on thermal efficiency of buildings, energy

efficiency standards and norms, and energy metering, should result in a coherent framework policy.

One major risk which was confirmed to the UNDP team in early March by the Ministry of Energy, is that due to the slow Parliamentary process, it may take several months before these drafts laws are adopted. However, as mentioned under the chapter "Sustainability", the Ordinance which will enter into force during the summer of 1995 will provide a strong incentive at an earlier stage.

### **13. Project Financing and Budget**

The indicative total cost of the project is US\$ 6,368,000. The contributions of the Government of Romania and Donors are estimated at US\$ 1,160,000 and US\$ 1,850,000 respectively. The Government of Romania will allocate US\$ 1,050,000 in direct support (\$200,000 for combustion efficiency service), \$400,000 for industrial heat recovery, \$350,000 for electric motor controls, \$100,000 for energy efficient municipal lighting and \$200,000 for modernisation of district heating systems an \$110,000 in kind. Parallel financing and cost-sharing from the PHARE programme has been assumed in budgeting the proposed programme and commitments on these contributions have already been obtained. In addition, a commitment of US\$ 200,000 from RENEL has been obtained for investment in energy efficient municipal lighting.

Building energy management capacity will lead to preparation of projects for financing by outside sources such as EBRD which is also fully supportive of this project.

## Annex 1

## INDICATIVE GEF BUDGET, INCLUDING INCREMENTAL COST SUMMARY

COMPONENT	Staff Costs	Training Costs	Equipment Costs	Travel Costs	TOTAL COSTS	Transaction Barrier to Implementation	LIKELY INCREMENTAL COSTS	REPLICATION/ DISSEMINATION
<b>1. Improve Energy Management Capacity</b>						Lack of MIS's. Lack of know- how, specially in preparation of project proposals.	Positive.	Consultancy assistance & operational managers available; information and training.
Total Funds needed (Requested from GEF)	250 150	150 150	0 0	20 20	420 (320)			
<b>2. Development of Local Energy Strategy</b>						Lack of local skill & knowledge of Energy and IRP.	Incremental costs unlikely.	Replicable training packages
Total Funds Needed (Requested from GEF)	150 0	150 0	30 0	20 0	350 (0)			
<b>3. General Information Dissemination</b>						Inadequate information & Awareness re Energy Efficiency (rationing)	Positive.	Project officer for dissemination; information campaigns for technical and non technical audience
Total Funds Needed (Requested from GEF)	60 60	300 300	20 20	20 20	400 (400)			
<b>4. Combustion Efficient Service</b>						Lack of skills and modern equipment.	Negative with initial learning costs.	Pre- and post- investments monitoring for results dissemination.
Total Funds Needed (Requested from GEF)	50	50 50	150	10 10	260 (60)			
<b>5. Heat Recovery in Industry</b>						Institutional obstacles; Information and finance gaps.	Negative with initial learning costs.	Information strategy & formulation of financing schemes for replication.
Total Funds Needed (Requested from GEF)	120 120	120 120	400 0	40 40	680 (280)			
<b>6. Electric Motor Controls</b>						Lack of information skills, and financing for VSD's.	Negative with initial learning costs.	Information strategy & formulation of financing schemes for replication.
Total Funds Needed (Requested from GEF)	260 40	160 90	390 0	40 20	850 (150)			
<b>7. Efficient Municipal Lighting</b>						Lack of local demonstration and	Negative with financial and	Information strategy & formulation of financing

COMPONENT	Staff Costs	Training Costs	Equipment Costs	Travel Costs	TOTAL COSTS	Transaction Barrier to Implementation	LIKELY INCREMENTAL COSTS	REPLICATION/ DISSEMINATION
Total Funds Needed (Requested from GEF)	150 30	100 50	350 0	50 20	650 (100)	financial schemes.	demonstration needs.	schemes for replication.
8. <del>District Heating/Buildings</del> Total Funds Needed (Requested from GEF)	150 0	330 130	1,000 0	50 0	1,530 (130)	No skills for rehabilitation; no local demonstration.	Negative with initial learning costs.	Dissemination of project results/design of similar projects.
9. <del>Project Management and Coordination</del> Total Funds Needed (Requested from GEF)	925 525	0 0	30 30	30 30	985 (585)	Lack of project management capabilities.	Positive	Highly skilled staff to assess replication potential/select technology/host sites/put forward case for internal & external funding.
Monitoring				0	(75)			
Support Costs (@ 8% of GEF Contribution)				0	(168)			
TOTAL PROJECT BUDGET					6,368			
TOTAL GEF REQUEST					2,268			

Figures are in US\$ 000s

Figures represent budgetary totals for the entire 5-year period

# INDICATIVE BUDGET - CONTRIBUTIONS GEF, ROMANIA AND OTHER DONORS

Component Task	GEF	Romania	Cost-Sharing		Parallel Financing		Total
			PHARE	RENEL	PHARE	FRENCH*	
1. Improving energy management capacity	320				100		420
2. Capacity development of local energy strategies					350		350
3. General training and information dissemination	400						400
4. Combustion efficiency service	60	200					260
5. Heat recovery in industry	280	400					680
6. Electric motor controls	150	200	500				850
7. Energy efficient municipal lighting	100		350	200			650
8. Modernisation of district heating systems and building insulation	130	250			150	1,000	1,530
9. Project management and coordination	585		400				985
Monitoring and Evaluation	75						75
Support, administrative costs	168	110					278
<b>GRAND TOTAL</b>	<b>2,268</b>	<b>1,160</b>	<b>1,250</b>	<b>200</b>	<b>600</b>	<b>1,000</b>	<b>6,478</b>

Figures are in US\$ 000s

Figures represent budgetary totals for the entire 5-year period

Figure of \$110,000 for GoR contribution is in kind



Support and administrative costs from the Romanian side are in kind contribution

\* This allocation has been authorized by the FFEM Steering Committee. The Steering Committee has proposed that priority be given to Component 8. However, a final decision on fund allocation will take place in September.

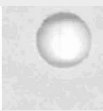
## INDICATIVE BUDGET - CONTRIBUTIONS GEF ROMANIA, OTHER DONORS AND ONGOING ACTIVITIES

COMPONENT TASK	GEF	Romania	Cost Sharing		Parallel Financing		Total 1 (GEF Project)	Ongoing activities in the energy sector related to this project			Total 2 (Ongoing activities)	Overall Total (1 + 2)
			PHARE	RENEL	PHARE	FRENCH*		PHARE	USAID	EBRD		
1. Improving Energy Management Capacity	320				100		420	185		300	485	905
2. Capacity Development of Local Energy Strategies					350		350					350
3. General training and information dissemination	400						400	185			185	585
4. Combustion efficiency service	60	200					260	90			90	350
5. Heat recovery in industry	280	400					680	90			90	770
6. Electric motor controls	150	200	500				850		200		200	1,050
7. Energy efficient municipal lighting	100		350	200			650		50		50	700
8. Modernisation of district heating systems & buildings insulation	130	250			150	1,000	1,530	280		400	680	2,210
9. Project management and coordination	585		400				985					985
Monitoring and evaluation	75						75					75
Support, administrative costs	168	110					278					278
<b>GRAND TOTAL</b>	<b>2,268</b>	<b>1,160</b>	<b>1,250</b>	<b>200</b>	<b>600</b>	<b>1,000</b>	<b>6,478</b>	<b>830</b>	<b>250</b>	<b>700</b>	<b>1,780</b>	<b>8,258</b>

Figures are in US Dollars

Figures represent budgetary totals for the entire 5-year period.

Support and administrative costs from the Romanian side are in-kind contribution.



\* This allocation has been authorized by the FEM Steering Committee. The Steering Committee has proposed that priority be given to Component 8. However, a final decision on fund allocation will take place in September.



## **Annex II**

The potential sites to establish Energy Action Area are: part of Bucharest, Ploiesti, Targu Mures County, Hunedoara County and Baia Mare. All of these areas cover industrial and residential sectors. Sites have been ranked according to population (with about 500 to 700,000 inhabitants considered ideal), the range of industrial sectors, the likely environmental impact from energy saving measures (higher in coal fired areas) and the degree of support from the Council and the RADET (heating company). This approach has been combined with discussions with ARCE to select Targu-Mures and Hunedoara County as suitable sites for the first Energy Action Area. This information relates to counties. In each county approximately 50% of the population, industry and local budget is concentrated in the main city, named in brackets. 1992 information is quoted as more recent information is not available.

### **Targu Mures County (Targu Mures)**

Area: 6714 sq. km.

Population: 610,053

Energy & mineral resources: natural gas, oil, mineral water, clay.

Industry : 1992 GDP \$US565M

Main industries:

- . gas exploitation
- . chemicals
- . building materials
- . wood processing
- . glass
- . food processing

Local budget: \$US17.8 in 1992.

### **Bucharest City**

Area: 1821 sq. km.

Population: 2,343,105

Energy & mineral resources: geothermal water

Industry: 1992 GDP \$US2770M

Main industries:

- . machine building
- . metallurgy
- . glass
- . electronics
- . electric motors
- . chemicals (drugs, tires, dyes)
- . food processing



. textiles

Local budget: \$US143 in 1992

NB: A section of Bucharest only would be chosen as an Energy Action Area.

### **Hunedoara County (The Jiu Valley and Deva)**

Area: 701,601 sq. km.

Population: 549,432

Energy & mineral resources: coal (hard, brown), ferrous minerals

Industry: 1992 GDP \$US549M

Main industries:

- . coal mining
- . steel
- . cement
- . textiles
- . electricity generation

Local budget: 1992 \$US12

### **Mara Mures Country (Baia Maria)**



Area: 6,304 sq. km.

Population: 540,099

Energy & mineral resources: non-ferrous minerals

Industry: 1992 GDP \$US318M

Main industries:

- . mineral exploitation
- . non-ferrous metallurgy
- . wood processing
- . textiles

Local budget: 1992 \$US17

### **Ploesti County (Ploesti)**

Area: 4,716 sq. km.

Population: 525,715

Energy & mineral resources: natural gas, oil, lignite, minerals

Industry; 1992 GDP \$US2,016M

Main industries:

- . oil processing
- . drilling equipment
- . building materials

- . paper and board
  - . glass
  - . food
  - . textiles
- Local budget: \$US23M

Criteria for selection:

	POINT	NOTES
	< 400 or > 700,000 = 1	optimum
Spread of industry	1 for each sector	
Environmental impact	1-3	3 for coal fired areas
Cooperation	3-5	5 highest co-operation

AREA	POPULATION	INDUSTRY	ENVIRONMENT	CO-OPERATION	TOTAL
Targu Mures	3	6	2	5	16
Bucharest	1	8	2	3	14
Hunedoara	3	4	3	5	15
Ploesti	1	7	2	3	13
Mare Mures	3	4	2	3	12

Recommendations:


Targu Mures and Hunedoara Counties were visited in the last two months as part of an EU mission. The best choice could be Targu Mures on the grounds of:

well organised RADET  
well organised Council  
close links between the two bodies

(not true in other cases)

reasonable infra-structure  
Hunedoara county is very reliant  
on the extractive industries, notably coal. This is good in the  
sense that any energy efficiency improvements will lead to a  
proportionately larger reduction in carbon dioxide emissions, but





it may mean that there are fewer industrial energy saving opportunities, and hence it may be less effective as a demonstration project.

Conditions under which the fewer selection of Hunedoara County would be preferable include the cooperation of the Council on each component, and not only the project of Deva (rehabilitation of district heating). The latter should be re-evaluated in comparison to lower cost options and possible decentralisation with local boilers (possibly using oil or coal in Atmospheric Fluidised Bed Units). Hunedoara could be considered as a prime candidate as second Energy Action Area.

## **COMMENTS ON THE GEF PROJECT "ROMANIA -- CAPACITY BUILDING FOR GHG EMISSION REDUCTION THROUGH ENERGY EFFICIENCY"**

**Howard S. Geller**  
**July 28, 1995**

This is a highly relevant project to greenhouse gas emissions reduction and the mission of the GEF. Increasing energy efficiency is a key strategy for reducing carbon emissions as well as revitalizing the economies of former communist nations such as Romania. The objectives of this project, namely to increase energy efficiency on a wide scale and build institutional capability for supporting energy efficiency improvements, are sound. The project appears to be well-designed. And the political, economic, and institutional conditions in Romania (e.g., energy price and legislative developments) suggest that the project should be successful. I strongly recommend GEF funding for this project.

The approach spelled out in the proposal is clearly defined and appears to be reasonable. The concept of demonstrating energy efficiency improvements in a few buildings and facilities, accompanied by evaluation, training and education campaigns in order to promote replication on a wide scale, should be viable. Capacity building is also emphasized, which is critical. And the creation of a revolving loan fund for financing major investments in energy efficiency (mentioned in section 5) will also be helpful.

I have the following suggestions as to how to possibly increase the effectiveness of individual project components:

In the area of local energy strategies (component 2), it might be useful to link key Romanian cities with the Urban CO<sub>2</sub> Reduction Project of the International Council for Local Environmental Initiatives (ICLEI) based in Toronto. They have formed a network and facilitate information exchanges among cities worldwide (Contact: Phil Jessup - 416/392-1462). Another suggestion is to hold competitions and give out awards to the cities/towns in Romania that achieve the greatest energy savings or implement especially innovative projects.

In the industry demonstration and support areas (components 4-6), the activities could be expanded to include providing direct technical assistance to industries that are in the process of modernizing or simply interested in making minor energy efficiency improvements. This can be done by having experts on staff at ARCE or hiring consultants with expertise in particular areas. Technical experts could make recommendations regarding how to maximize energy efficiency at the time of major renovation or replacement of energy-intensive industrial combustion efficiency, reducing steam leaks, and

the like. Direct technical assistance to industries and commercial building owners has been a successful DSM strategy in the United States and elsewhere.

In the district heating system renovation area (component 8), in addition to conducting a demonstration project and disseminating information, it might be useful to provide technical assistance to local district heating utilities for the purpose of evaluating and designing retrofit projects, as well as providing limited assistance during project implementation (e.g., help with the identification and evaluation of reliable engineering contractors). Also, it might be helpful to link up with other former communist nations where similar district heating system renovation is underway.