



**United Nations Development Programme**  
Global Environment Facility



**To:** Mr. Al Duda  
Team Leader, Operations

**Date:** 4 September, 1997

**Fax:** 202-522-3240

**From:** Emma Torres  
Deputy Executive Coordinator  
UNDP/GEF

**Subject:** **Submission of the revised PDF-B proposal "Removal of Market Barriers for Biomass Based District Heating Projects in Slovenia"**

In reference to your fax of September 2, 1997 summarizing the conclusions and recommendations of the Bilateral Review Meeting held on August 26, 1997, please find enclosed the revised PDF, Block B proposal for the project "Removal of Market Barriers for Biomass Based District Heating Projects in Slovenia"

The required changes have been addressed as follows:

a-b. The section "Summary Project Objectives and Description" has been revised to provide more detailed information on the tentative sources of biomass fuel and on the fuels that it will displace, and to address the concerns of transportation and the negative environmental impacts that the project might have.

c. To emphasize the requirement for a consultative process in preparing the full proposal, the relevant paragraph at the beginning of the section II has been revised, and an activity focusing on stakeholder identification has been added.

d. At the end of the section II, a paragraph has been added to clarify the type of the participants and the purpose of the workshop.

e. A paragraph clarifying the nature of the Government in-kind contribution has been added in the section V "National Level Support".

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**Summary of Recommendations on the PDF-B Proposal  
from the Bilateral Review Meeting with UNDP held on August 26, 1997**

**PDF-B: Removal of Market Barriers for Biomass Based District Heating Projects in Slovenia (\$0.098 million)**

*Recommended for CEO approval, subject to the following revisions in the proposal:*

- a) Since Operational Program #6 deals with the promotion of "win-win" renewable energy options, the proposal should indicate the following: (1) the expected sources of biomass fuel; (2) whether wood supply for harvesting will be sustainable over the long-term; (3) the potential impacts on biodiversity, whenever applicable; (4) the distance of hauling and transporting woodfuel; and (5) the possible fuels that biomass would displace.
- b) A detailed study clarifying the above technical, economic and environmental aspects of the proposed project will be undertaken during the PDF phase.
- c) The proposal should indicate that a stakeholder identification and consultative process will be carried out as part of project preparation activities, with a view towards using lessons and results from this process to identify key social issues and to develop a stakeholder involvement plan.
- d) The proposal should briefly describe the topics that will be included at the proposed workshops and the types of participants.
- e) The only form of co-financing identified for project preparation is the in-kind government contribution of US\$40,000. A brief description of the nature of this contribution should, therefore, be included in the proposal.

**UNITED NATIONS DEVELOPMENT PROGRAM  
GLOBAL ENVIRONMENT FACILITY**

**PROPOSAL FOR PDF BLOCK B & C GRANTS**

<b>Country:</b>	Republic of Slovenia
<b>Project Title:</b>	Removal of Market Barriers for Biomass Based District Heating Projects in Slovenia
<b>GEF Focal Area:</b>	Climate Change
<b>Amount of PDF Funding Requested:</b>	US\$ 98,000
<b>Government Cofunding:</b>	US\$ 40,000 (in kind)
<b>Duration:</b>	6 months
<b>GEF Implementing Agency:</b>	UNDP
<b>Executing Agency</b>	Government of Slovenia
<b>Cooperating Agency</b>	UN OPS
<b>Block B <input checked="" type="checkbox"/> X</b>	<b>Block C <input type="checkbox"/></b>
<b>Block A Grant Awarded:</b>	No

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## **I. Summary Project Objectives and Description**

The objective of the full-scale project to be developed with the PDF resources requested here is to remove barriers to commercial scale biomass based district heating in Slovenia, thereby reducing the greenhouse gas emissions associated with the current use of fossil fuels (coal, oil and natural gas) for this purpose.

The project is expected to achieve this goal through a set of measures including: (i) upgrading institutional capacity for research, planning and technology transfer related to biomass based district heating; (ii) reviewing and improving, as seen necessary, the institutional, legal and regulatory framework, and (iii) facilitating mainstream financing for biomass based district heating by reducing the uncertainties on cost and various technical issues related to it, and demonstrating its technical and economic feasibility in order to move towards larger, commercial scale applications.

The project will have a specific emphasis on the sustainable use of the available biomass resources (tentatively industrial waste wood and residues), so as to ensure that the project will not have a negative impact on biodiversity or environment in general. As part of this effort, a detailed environmental impact assessment will be undertaken during the PDF phase.

Since industry is expected to be the main source for the biomass, the transportation should not be a problem. The district heating plant can either be integrated into the same industrial facility that is producing the waste wood, or it can be constructed within the distance that is short enough to avoid concerns on transportation. Regarding the other potential source of biomass, namely the residues from forest cleaning, transportation is an issue that will be studied in more detail during the PDF phase.

A detailed study clarifying all the technical, economic and environmental aspects presented above will be undertaken during the PDF phase.

## **II. Description of Proposed PDF Activities**

The PDF-financed activities under the project "Removal of market barriers for biomass based district heating projects" are intended to identify all the main barriers preventing the more extensive use of biomass for district heating, and after consultation with the parties concerned, to prepare a strategy and a proposal for a set of measures to remove those barriers.

A stakeholder identification and consultative process will be carried out as part of project preparation activities, with a view towards using lessons and results from this process to identify key social issues and to develop a stakeholder involvement plan.

The main proposed activities are:

1. Identify all the relevant stakeholders and develop a plan how to involve them into project planning and implementation from the beginning of the PDF phase.

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2. By building on the results of the ongoing and finalized studies, undertake a "market analysis" focusing on the (i) size of the market (including identification of suitable sites and assessment of economically attractive biomass potential at these sites); (ii) consistency with the general development plan of the power sector in Slovenia; (iii) investment needs and potential financial resources/arrangements to utilize the available wood biomass potential for district heating in Slovenia; and (iv) identification of all the key barriers to biomass based district heating in Slovenia (including high implementation costs and energy price distortions), and estimate the extent that these barriers hamper the cost-effective implementation of biomass based district heating in Slovene towns;
3. Undertake an analysis of the social and environmental impacts of the increasing use of biomass as a fuel;
4. Evaluate the local capacity to operate, maintain and manufacture wood biomass fueled boilers and/or components (including the evaluation of the potential for joint ventures);
5. By building on the results of this and the other ongoing or finalized studies, finalize the technical, economic, social and environmental feasibility study for the first demonstration plant;
6. Formulate a strategy (a "National Scheme of Biomass District Heating and Co-generation Projects Penetration") and a proposal for a set of measures to overcome all the main barriers to biomass based district heating in Slovenia, under consideration of technical, economic, social and environmental information;
7. Identify and mobilize cofunding and international partners for the first demonstration plant and for the implementation of the strategy and the selected set of measures to remove other barriers to biomass based district heating in Slovenia;
8. Undertake an independent technical/economic evaluation of the project identifying potential risks that can prevent meeting the short or long term objectives of the proposed strategy and suggesting changes that should be made to meet those objectives.
9. Finalize the project brief for the main project (including the finalization of the incremental cost calculations).

During the PDF phase at least one larger workshop will be organized involving representatives from the relevant government ministries, research institutions, NGOs, local municipalities and private sector. The purpose of the workshop is to review and discuss the early results of the studies (including the draft GEF proposal) and to build a basis for negotiations on project financing and implementation arrangements

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### III. PDF Outputs

The output of the PDF will be a project brief for the "main project" demonstrating the ability to achieve the goals set for the project including:

- i. an assessment of the economic scope in the market for biomass based district heating, the quantity of financial resources required, and the contribution that fulfilling the full scope of the project would make in mitigating greenhouse gases in Slovenia;
- ii. a description of all the key barriers to biomass based district heating and cogeneration in Slovenia, and a strategy and proposed set of measures to remove those barriers with technical, economic, social and environmental repercussions. Tentatively, the components which are envisioned to be addressed in the strategy include: (i) public education activities and motivational campaigns; (ii) attracting national/international financial resources; (iii) regulatory requirements; and (iv) knowledge/technology transfer.
- iii. a plan for involvement of all the key stakeholders;
- iv. results of a technical, economic, social and environmental feasibility study of the first demonstration plant;
- v. a detailed incremental cost analysis following the GEF guidelines;
- vi. a financing plan and agreements on cofunding for the first demonstration plant, and an initial analysis of the resources available for the subsequent investment phase; and
- vii. a plan and a set measures for monitoring and evaluating the programmatic benefits of the project.

### IV. Eligibility

The Republic of Slovenia signed the Climate Change Convention on June 13, 1992 and ratified it in September 1995.

The study "Qualitative, Structural & Regional Assessment and Evaluation of Wood Biomass Potential for Energy Purposes in Slovenia", prepared by Forestry Institute of Slovenia in 1995, concluded that prospects for more extensive biomass utilization exist, but further goal-oriented research is needed to get reliable, site specific data on sources, quantities, energetic value and social/economic significance of wood biomass. Additional information on various technical, economic, social, environmental, logistical and financial aspects of wood biomass energy utilization at series of possible sites is needed.

Renewable energy sources, in general, are considered as an important future primary source of energy in Slovenia. The priorities are, as laid down in the Government's *Strategy of Energy Use and Supply of Slovenia*, to increase the share of renewable energy sources

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in energy production and to enhance combined heat and power production. These goals are also in line with Slovene efforts necessary to comply with the United Nations Framework Convention on Climate Change.

Operationally, the project falls under the GEF Operational Program # 6, "Promoting the Adoption of Renewable Energy by Removing Barriers and Reducing Implementation Costs".

## V. National Level Support

The Government of Slovenia has systematically supported renewable energy programs and investment projects since 1991 through its public competition program. The support was spent through a number of instruments, through soft loans, interest rate subsidies and grants. The Government budget for renewable energy sources for the period 1991-1996 amounted 10 million ECU.

Following hydropower, biomass is the second most important renewable energy source in Slovenia, and recently the Ministry for Economic Affairs has taken an active role in this field. Among other measures, organization of two promotional events, a symposium in Jarenina, December 1994, and a workshop "Biomass - Potential Energy Source for Slovenia", APE, Santa Vita d.o.o., and Energieverwertungsagentur - Vienna, Brdo/Kranj, April 1996, raised substantially the interest of potential investors. The Ministry has also financed the study "Qualitative, Structural, & Regional Assessment and Evaluation of Wood Biomass Potential for Energy Purposes in Slovenia", which indicated a considerable potential for biomass utilization.

Following a public tender organized by the Ministry in 1996, some communities formally applied for Government support to increase the use of biomass as an energy source. Based on this interest, the Ministry co-financed up to 50% of the feasibility studies for biomass-based district heating in the following towns/villages: Gornji Grad, Preddvor, Trzic, Kocavje, Zelezniki. These feasibility studies are now in the final phase of implementation.

The Ministry also offered last year to subsidize up to 25% of investment cost for biomass based district heating projects. However, only one project so far (Gornji Grad) has been formally put forward for the call for tenders. Although the foreseen subsidy is relatively high and the environmental benefits of biomass based district heating projects are obvious, the interest to invest in this field is still rather low. The absence of public awareness and the lack of experience with biomass based district heating in Slovenia, together with the relatively high investment costs, seem to hinder the development of the projects.

In addition to the above mentioned measures, the preparation of energy concepts for small towns has been co-financed. All of this can be considered as a first step in opening up a larger market, taking into account that more than 50% of Slovenia is wooded area.

Regarding the funding for this PDF phase, the Government of Slovenia will contribute US \$ 40,000 (in-kind) to cover part of the costs of project preparation. This contribution

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will mainly consist of the salaries of the relevant Government employees participating in the project development as well as miscellaneous costs such as office space, office supplies etc.

Regarding the main project, cofunding is expected both from the Government of Slovenia and from bilateral and/or multilateral sources which will be identified during the further preparation of the project. This costsharing would mainly focus on financing the investment costs of the first demonstration plant. Serious investigations are currently going on, for instance, with the EU/PHARE programme to implement a pilot district heating project, using biomass as a fuel.



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**VI. Items to be Financed**

	<b>GEF (US \$)</b>	<b>Co-funding (in-kind,US \$)</b>	<b>Project total</b>
<b>Personnel:</b>			
International consultants	30,000		30,000
Local consultants/personnel	20,000	40,000	60,000
Subcontracts	25,000		25,000
Workshops	5,000		5,000
<b>Travel:</b>			
International travel	5,000		5,000
Other travel	3,000		3,000
Miscellaneous	10,000		10,000
<b>Total</b>	<b>98,000</b>	<b>40,000</b>	<b>138,000</b>