



Global Environment Facility

August 18, 2000

Mr. Rafael Asenjo
GEF Executive Coordinator
United Nations Development Programme
One United Nations Plaza
New York, NY 10017

Dear Mr. Asenjo,

I am pleased to inform you that the request for \$320,000 in PDF resources for the project proposal *Tanzania: Promoting the Adoption of Renewable Energy by Removing Barriers and Reducing Implementation Costs*, has been approved by the CEO following receipt of revised project document on August 4, 2000. The proposal has earlier been recommended for entry into the GEF Pipeline at a Project Review Meeting between the GEF Secretariat and UNDP on July 27, 2000.

It is understood (i) that during preparation, the comments of GEF Secretariat, Implementing Agencies, and other organizations will be taken into account to address technical issues and to ensure coordination of activities, and (ii) that when the project is submitted for Work Program inclusion it will be well advanced in preparation and responsive to the general project review criteria as well as to specific comments in the Secretariat's Project Review Sheet.

Please find attached a copy of the Project Tracking Sheet for your records.

Sincerely,

Kenneth King
Assistant Chief Executive Officer



Ref #: GEFSEC-N-2000-00212

PROJECT MANAGEMENT FOR GEFSEC

External Incoming Correspondence Log

Official Use Only

Due Date:

07/11/2000

FOR ACTION: Frank Rittner

STATUS: Open

Project Name: Removing Barriers to the Transformation of the Rural PV Market

VPU/Dept/Div: GEF	Date Logged: 06/27/2000 07:06:27 PM
Room : G 6-021	Logged By: Ramon Prudencio C. De Mesa (GEF)
Telephone: 458-5044	

CORRESPONDENCE DESCRIPTION:

From:	Rafael Asenjo
Organization:	UNDP
Reference #:	
To:	Mr. Keneth King
Dated:	06/26/2000
Type:	OP6
Subject:	PDF B: Tanzania: Removing Barriers to the Transformation of the Rural PV Market

ACTION INSTRUCTIONS:

<p><i>Please review and/or technical comments for bilateral meeting</i></p> <p>Note: electronic file available at m:\ramon\bilateral\2000 July</p> <p><i>Antopase</i></p>

INFORMATION COPIES:

Alan Miller, Michael Sanio, Martinot, Maria C. J. Cruz/Person/World Bank, Days

**UNITED NATIONS DEVELOPMENT PROGRAMME
GLOBAL ENVIRONMENT FACILITY
Programme of the Government of the United Republic of Tanzania
PROGRAMME DOCUMENT
PDF Block B**

Country:	Tanzania
GEF Focal Area:	Climate Change
GEF Programming:	OP#6 Promoting the Adoption of Renewable Energy by Removing Barriers and Reducing Implementation Costs
Project Title:	Removing Barriers to the Transformation of the Rural PV Market in Tanzania
PDF Request:	US\$320,000
Total Cost:	US\$420,000 (plus SIDA contribution)
Other contributions:	UNDP (Trac) US\$90,000
Implementing Agency	UNDP
Executing Agency:	Ministry of Energy and Minerals
Block:	PDF Block B
Duration:	One Year

PROGRAMME SUMMARY:

This PDF B (Programme Development Facility) is intended to review the status of the rural market for solar photovoltaics in Tanzania, identify barriers to its sustained growth; and formulate a project to remove the identified barriers and give a boost to this market which is considered strategic in Tanzania's future energy development. The approach will involve a review of delivery modes; an assessment of potential sources of commercial financing; formulation of a training plan; the development of a plan to formulate codes and standards; and an evaluation of market potential. In order to better manage the initiative, it is expected that the PDF activity will focus on one region of the country, namely Mwanza.

The programme builds on a Government project, funded by UNDP TRAC, which produced "*A Framework for a National Programme to Promote Renewable Energy Technologies and Energy Conservation in Tanzania*". It also reviewed the "*Solar Energy Programme to the United Republic of Tanzania*" as submitted to the World Solar Summit and it incorporates some of the lessons identified in the GEF Review of Photovoltaic Projects.

1. PROGRAMME OBJECTIVE

The overall objective of the programme is to remove barriers to the growth of the rural market for photovoltaic (pv) equipment in Tanzania, thereby reducing the reliance on fossil fuels and reducing greenhouse gas emissions, while improving the quality of life of the rural population.

2. GLOBAL SIGNIFICANCE

Tanzania has an estimated population of 30 million. Despite a growing urbanization trend, the majority of Tanzanians (75%) still live in rural areas. The population in these rural areas is largely dependent upon kerosene and firewood to meet their energy demand. Tanzania has a relatively young photovoltaic industry, which has not yet begun to tap the potential rural market. This programme is designed to identify and remove barriers to the expansion of that industry into sustainable growth in the rural areas. Even if only 25% of Tanzania's rural population would be able to have access to PV's in the form of lanterns or solar home systems, this represents a market of slightly more than 1 million households.

3. BACKGROUND

3.1 Macroeconomic profile

For the last five years Tanzania's Gross Domestic Product has been growing at an average of 4% per annum and the population at 2.8% per annum with a per capita income of US \$ 250. Agriculture is the mainstay of economy, contributing 50% of the GDP and in excess of 60% of export earnings. The sector is providing the employment of the majority of Tanzanians.

Tanzania's energy balance reflects the dominance of the biomass sector. Woodfuel and fuelwood use mainly in households account for about 92% of the total primary energy consumption. The rest is accounted for by commercial energy in the form of petroleum and electricity.

Tanzania has enunciated a national vision aimed at eradicating poverty by 2025. In order to achieve this goal, the economy has to grow in excess of 7% per annum. The energy sector has to grow in excess of 8% per annum in order to provide the necessary input for the growth of the economy. Since poverty reduction is at the centre of the national vision, interventions in this regard have to be directed at the rural areas where the majority of the population is. Access to reliable and affordable rural energy services and modernization of energy supply options could lead to a shift from use of biomass-based fuels for cooking and kerosene open fire for lighting. The dependence on these fuels negatively impacts on the environment and the quality of life.

3.2 Programme Rationale

This programme will entail the development and dissemination of solar energy technology in order to facilitate the use of renewable energy in rural areas thereby reducing greenhouse gases (GHG) emissions. At the same time the programme will popularise and facilitate widespread adoption of solar energy technologies by rural households who have no prospects of being electrified by the national power grid in the near future. The programme will take the advantage of abundance of solar in Tanzania due to its location. The solar insolation regime is such that much of the country, lying between latitude 1° and 12° south of the equator, is ideal for solar

energy development and utilization. This tremendous potential for solar energy has not yet been sufficiently tapped.

3.3 Government Policy Issues on Renewable Energy and Rural Energy

The programme is in harmony with the Tanzania Government efforts toward promoting renewable and rural energy. Currently the national energy policy is being reviewed. The revised draft energy policy on this aspect encompasses the following: The need...

- to create and organize a long term systematic awareness creation movement with close cooperation and participation of NGOs as well as the private business sector.
- to create an institutional structure and mechanism to address technical and financial barriers to increased use of renewable energy and availability of energy services in rural areas.
- to explore financing opportunities for non-commercial areas of rural energy.
- to develop a market for renewable energy technologies to exploit solar, wind, micro-hydro, non-woody biomass, and geothermal sources.
- to facilitate increased availability of energy services, including rural electrification to existing and potential economic growth centres in the rural areas.
- to improve the quality of life for populations in remote areas by providing access to safe and environmentally sound electricity.
- to include environmental considerations in all renewable and rural energy planning and implementation.

This programme also builds upon the "*Solar Energy Programme and Project Proposals for the United Republic of Tanzania*", submitted to the World Solar Summit by the Government of Tanzania and "*A Framework for a National Programme to Promote Renewable Energy Technologies and Energy Conservation in Tanzania*".

3.4 Support by UNDP and other Donors

UNDP has assisted the Government of Tanzania with its own TRAC funds, which produced "*A Framework for a National Programme to Promote Renewable Energy Technologies and Energy Conservation in Tanzania*". This document now forms the basis for ongoing and planned support for renewable energy in the country. SIDA is co-operating with UNDP in this initiative and has produced the "*Tanzania Rural Energy Study*" which builds upon this previous activity. This GEF programme will be a follow-up to the renewable energy framework programme, implementing the solar energy component.

DANIDA is planning to introduce a solar home system for demonstration purposes in the near future in a few of the municipalities under the sustainable cities programme, one of them being Mwanza. This will be mutually supportive with this PDF B. Furthermore, the assistance of DANIDA to the vocational training sector in the country will be supportive to this programme with respect to activity 4 (see page 4). DANIDA's assistance to 'CRDB 1996 Limited' in the area of micro-credit also provides an entry-point for co-operation. With respect to credit organisations there are other potential partners, including the Royal Netherlands Embassy and TASAF (Tanzania Social Action Fund) supported by the Worldbank.

4. PROGRAMME DESCRIPTION

The full GEF programme is expected to be a 3 to 5 years initiative which is designed to remove barriers to the expanded use of PV's in Tanzania's rural markets, including households, schools, dispensaries, and commercial applications. It will build upon the lessons learned by the review of GEF support to photovoltaic projects.

The Ministry of Energy and Minerals (MEM) will execute this programme and the involvement of a National Implementing Agency will be sought. A Steering Committee will be formed to oversee the programme implementation. The implementation structure of the PDF activities will include an international co-ordinator, who will work in close co-operation with a national Senior Technical Adviser. This national advisor will provide his expertise on selected technical issues and will hence not be employed on a full-time basis. Both will report to the Steering Committee, comprised of the relevant stakeholders. The co-ordinator will act as the secretariat to the steering committee. A programme specialist in the UNDP Country Office will work directly with the international co-ordinator to support the technical and managerial backstopping of this PDF B and the full-fledged proposal that will be developed. Actual PDF activities will include a number of subcontracts linked to the main programme components/activities (see below).

5. DESCRIPTION OF PROPOSED PDF ACTIVITIES

The activities proposed as part of this PDF B are listed below:

Activity 1: Development of PV Standards and Norms: To evaluate the international experience of PV GAP and other countries in their development of standards for photovoltaic systems and components in order to develop a plan on how these will be adopted; adapted; and applied in Tanzania. This will include an assessment of certification processes; stamp(s) of approval; and carrot/stick incentive plans. The norms are expected to be adopted and applied as part of the project's implementation.

Activity 2: Market Assessment for Rural PV's: To undertake a market assessment and develop a market profile of the rural area (s) to be the focus of the project. To include population characteristics; saturation targets; estimates of current installations; estimates of potential future demand and identification of potential local commercial operators. The market assessment will pay attention to the various market segments (schools, households, dispensaries, health centres etc) and will provide estimates of potential demand for different products (lanterns, solar home system; refrigerators, etc.).

Activity 3: Evaluation of Market Aggregation Potential: To review the various purchasers for PV's and to identify which, if any, current or planned purchasers can be bundled into larger packages, thereby lowering costs and increasing financing possibilities.

Activity 4: Development of Human Resources Plan: To develop a plan for training, public awareness, and human resources development plan in order to ensure that the necessary skills and knowledge are available locally to make the programme sustainable.

Activity 5: Comprehensive Industry Survey: To develop a profile of the local PV industry including complete enumeration of number of actors; current and projected sales and installation estimates; current technical capabilities; plans for expansion; and local presence; and canvassing of interest and ideas for solar energy industry association.

Activity 6: Evaluation of Potential for Various Delivery Modes: To consider the various delivery mode possibilities (cash-sales, service model, utility model with pre-payment meters, etc) and decide which seems most appropriate for expanding the use of and access to PV markets in Tanzania. This should include an assessment of the state of electricity sector privatisation and its implications for remote rural electrification; an identification of potential Rural Energy Services Companies (RESCO) operators; an assessment of the thresholds or limits for the various enterprises; and recommendations as to which delivery mode(s) should be promoted. This activity will involve research, analysis and a study tour.

Activity 7: Financial Evaluation: To establish the viability of PV systems for the rural sector; to evaluate the potential for financing PV installations through existing commercial entities, co-operatives, and more informal or non-traditional credit organisations; and to identify proposals (consistent with 3 above) for enabling financing to flow to this sector. The evaluation of financial viability will include an assessment of the cash surplus of solar systems in comparison to representative energy sources, where existent. Users' possibility of generating cash earnings sufficient to cover the costs of maintenance of the equipment will be an important aspect.

Activity 8: Selection of the implementing agent: A national institution, who will act as the implementing agent for the programme, will be identified during the PDF B stage. This institution will work very closely with the Ministry of Energy and Minerals and all other relevant stakeholders.

Activity 9: Evaluation of Co-financing Options: To canvass the various traditional and non-traditional donors for co-financing for the project activities. This might take the form of identifying specific regions or activities for collaboration. In conjunction with 3) above, it should also involve canvassing of the private sector for their own in-kind contributions.

Activity 10: Formulation of Brief and Programme Document (including incremental cost analysis).

6. PDF BLOCK B OUTPUTS

The outputs of the above activities will include:

- 1) Plan for the Development of PV Standards and Norms;
- 2) Market Assessment for Rural PV's in Mwanza Region;
- 3) Evaluation of the Potential for Market Aggregation;
- 4) Human Resources Plan, including Training, Public Awareness, and Human Resource Needs;
- 5) Comprehensive Survey of the Baseline Status of the Tanzanian Solar Industry;
- 6) Evaluation Report of the Various Delivery Modes Promoted in other African PV Projects and their Applicability to Tanzania;

- 7) Evaluation of Options and Approaches to the Financing of the Growth of the Rural PV Market in Tanzania; and
- 8) Project Brief and Document.

7. ELIGIBILITY

Tanzania ratified the United Nations Convention on Climate Change (UNFCCC) in 1996. This makes the country eligible for funding of activities that will enable it to meet its obligations under the Convention.

8. NATIONAL LEVEL SUPPORT

This project has support at the highest levels of Government in Tanzania and is consistent with the goals and policies of the Ministry of Energy and Minerals. It has the full support of the GEF Focal Point, the Division of Environment of the Vice President's Office.

During the preparation of this PDF B, consultations were held with both of the above Government Agencies as well as the Ministry of Industry and Trade (MIT). In addition, stakeholder consultations were held with national NGO's and the private sector. The NGO's interviewed and in attendance at the PDF de-briefing included the Centre for Energy, Environment, Science and Technology (CEEST); Tanzania Traditional Energy Development Organization (TaTEDO) and Solar Innovations of Tanzania (formerly SONET). The private sector representatives interviewed and in attendance at the debriefing include BP Solar (Tanzania); Ultimate Energy Ltd.; Dynamic Electronics Pvt. (Ltd.); FREDKA International Ltd.; and Northern Energy Savings Co. Ltd.

9. TIMETABLE

The PDF B activities are expected to take one calendar year (12 months) to complete. The full project is expected to run for up to 5 years.

10. BUDGET**Budget By Activity in US\$**

Activity	GEF Contribution	Other Contribution (SIDA)	UNDP TRAC	Total
Activity 0: Formulation of National Renewable Energy Framework			90,000	
Activity 1: Dev't of Plan for Standards/Norms	30,000			
Activity 2: Market Assessment	50,000			
Activity 3: Evaluation of Market Aggregation Potential	30,000			
Activity 4: Dev't of Human Resources Plan	30,000			
Activity 5: Comprehensive Industry Survey	30,000			
Activity 6: Evaluation of Delivery Modes	30,000			
Activity 7: Financial Evaluation	50,000			
Activity 8: Identification of Implementing agent	See review workshops			
Activity 9: Evaluation of Co-Financing Options	20,000		—	
Activity 10: Formulation of Project Brief & Document	10,000			
Review workshops (up-country and DSM)	40,000			
TOTAL	370,000	100,000	90,000	510,000



THE UNITED REPUBLIC OF TANZANIA

Telegrams: "MAKAMU";
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 Fax: 113856/113082,
 In reply please quote:



VICE-PRESIDENT'S OFFICE,
 P. O. BOX 5380,
 DAR ES SALAAM,
 TANZANIA.

Our Ref: BD.78/201/01/54

Date: May 26, 2000

The UNDP Resident Representative and
 Resident Coordinator of the UN System,
 P.O.Box 1982,
 Dar es Salaam

**RE: ENDORSEMENT OF THE PDF B GRANT REQUEST FOR THE PROJECT
 TITLED "REMOVING BARRIERS TO THE TRANSFORMATION OF THE RURAL
 PV MARKET IN TANZANIA"**

The Government of the United Republic of Tanzania has reviewed the attached proposal bearing the above heading.

This project proposal aims at removing barriers to the growth of the rural market for photovoltaic (PV) equipment in Tanzania, thereby reducing the reliance on fossil fuels and reducing greenhouse gas emissions, while improving the quality of life of the rural population.

The Government is therefore pleased to endorse this project and kindly requests the UNDP to facilitate the release of the requested PDF B grant for the implementation of the identified activities.

Yours sincerely,

Abubakar Rajabu
 PERMANENT SECRETARY

cc: Permanent Secretary
 Ministry of Energy and Minerals,
 P.O.Box 2000,
 DAR ES SALAAM

Chief Executive Officer and Chairman,
 GEF
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