



REQUEST FOR CEO ENDORSEMENT

GEFSEC PROJECT ID: 2947
IA/ExA PROJECT ID: P084766
COUNTRY: Mongolia
PROJECT TITLE: Renewable Energy and Rural Electricity Access
GEF IA/ExA: World Bank
OTHER PROJECT EXECUTING AGENCY(IES): Ministry of Fuel and Energy
DURATION: 5 years
GEF FOCAL AREA: Climate Change
GEF STRATEGIC OBJECTIVES: CC-2, CC-3 and CC-4
GEF OPERATIONAL PROGRAM: 6
COUNCIL APPROVAL DATE: August 1, 2006
COUNCIL APPROVED AMOUNT*: US\$3.5M
CEO ENDORSEMENT AMOUNT*: US\$3.5M
ESTIMATED STARTING DATE: January 2, 2007


FINANCING PLAN (\$)		
	PDF	Project*
GEF	A	0
	B	0
	C	0
GEF Total		0
Co-financing		(provide details in Section d): Co-financing
GEF IA/ExA		3,500,000
Government		10,000,000
Others		6,000,000
Co-financing Total		19,500,000
Total		23,000,000
Financing for Associated Activities If Any:		

* For multi-focal area projects, indicate agreed split between focal area allocations

FOR JOINT PARTNERSHIP**		
GEF PROJECT/COMPONENT (\$)		
(Agency Name)	(Share)	(Fee)
(Agency Name)	(Share)	(Fee)
(Agency Name)	(Share)	(Fee)

** Projects that are jointly implemented by more than one IA or ExA

Approved on behalf of the World Bank. This proposal has been prepared in accordance with GEF policies and procedures and meets the standards of the GEF Project Review Criteria for CEO endorsement.


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 Date: November 17, 2006

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1. **FINANCING** (for all the tables, expand or narrow table items as necessary)

a) PROJECT COST

Project Components/Outcomes	Co-financing (\$)	GEF (\$)	Total (\$)
1. Herders Electricity Access	10,700,000	900,000	11,600,000
2. Soum Center Electricity Service	8,090,000	2,000,000	10,090,000
3. Institutional Capacity Building	410,000	190,000	600,000
4.			
5. Project Management budget/cost*	300,000	410,000	710,000
Total Uses of Funds/project costs	19,500,000	3,500,000	23,000,000

* This item is the aggregate cost of project management; breakdown of this aggregate amount should be presented in the table b) below:

b) PROJECT MANAGEMENT BUDGET/COST¹

Component	Estimated Staff weeks	GEF(\$)	Other Sources (\$)	Project Total (\$)
Locally recruited personnel*	1,700	285,000	225,000	510,000
Internationally recruited consultants*				
Office facilities, equipment, vehicles and communications		75,000	50,000	125,000
Travel		50,000	25,000	75,000
Miscellaneous				
Total		410,000	300,000	710,000

* Local and international consultants in this table are those who are hired for functions related to the management of project. For those consultants who are hired to do a special task, they would be referred to as consultants providing technical assistance. For these consultants, please provide details of their services in c) below:

c) CONSULTANTS WORKING FOR TECHNICAL ASSISTANCE COMPONENTS:

Component	Estimated Staff Weeks	GEF(\$)	Other Sources (\$)	Project Total (\$)
Personnel				
Local consultants*	2,100	830,000	220,000	1,050,000
International consultants*	210	570,000	280,000	850,000
Total		1,400,000	500,000	1,900,000

d) CO-FINANCING

Name of Co-financiers (source)	Classification	Type	At Concept (\$)	At Work Program (\$)	At CEO Endorsement (\$)*
IDA	Exec. Agency	in cash	3,000,000	3,000,000	3,500,000
Others	Bilat. Agency	in cash	7,000,000	500,000	0
Government of Netherlands	Bilat. Agency	in cash		6,000,000	6,000,000
Government of Mongolia	Nat'l Gov't	in cash	2,000,000	2,800,000	9,500,000
Government of Mongolia	Nat'l Gov't	in kind		500,000	500,000
Total Co-financing			12,000,000	12,800,000	19,500,000

* Reflect the final commitment amount of co-financiers and attach documents from co-financiers confirming co-financing commitments. Describe any difference of final commitment compared to those expressions of interest at concept stage or at work program inclusion.

¹ For all consultants hired to manage project or provide technical assistance, please attach a description in terms of their staff weeks, roles and functions in the project, and their position titles in the organization, such as project officer, supervisor, assistants or secretaries.

2. RESPONSE TO REVIEWS

a) COUNCIL

COMMENT 1: The assumption that a “commercial” approach with “smart subsidies” that offers good quality solar home systems would be successful should be proven by information on peoples’ ability and willingness to pay for such services. This information would also be needed to justify the level of subsidy required. For solar home systems, a “pro-poor flat subsidy” of 80-100 USD per system independent of its size is proposed. Besides, a contribution of about 200 USD is expected from the herder (resulting in totally 300 USD per system). The proposal should clearly present the actual cost of the systems, justify the subsidy part based on customers’ ability to pay, explain how the 200 USD should be raised by the customers, how to avoid that (wealthier) people buy two smaller systems instead of one bigger (to increase benefit from subsidies), and clearly define a (subsidy) exit scenario.

RESPONSE: A national survey on herders' electrification was conducted jointly by the Governments of Mongolia and Japan in 2003. The survey revealed two important characteristics of the market of solar home systems (SHSs) among nomadic herders: (1) A significant number of herder households would not be able to purchase a basic 20 Wp system (good for lighting only) with cash. The survey indicated that about 40% of herder households had annual cash income below US\$450. A good quality 20 Wp system would be retailed for about \$160. (2) Most herder households (two thirds) expected more than just lighting service from SHSs. They would like to be able to watch TV, requiring a minimum size of 50 Wp, which would be retailed for about \$400. The conclusion was that without significant subsidies, herders' electrification would be a prolonged process. The survey also investigated and analyzed willingness to pay and concluded that in order to achieve maximum saturation of SHSs the subsidy level for 50 Wp systems was about half of the full retail price, or about US\$160 at that time. This information is the basis for determining the smart subsidies in the proposed project.

GoM’s rural electrification strategy not only stresses the importance of providing for basic lighting service, but also the additional benefits of promoting rural information and communications programs. Acquiring a 50Wp or larger system opens up doors for such activities. To help herder households of different income levels maximize the benefits of electrification, the proposed project will adopt a two-tiered subsidies, covering system size in the ranges of 20-49Wp and 50-100Wp, respectively.

The proposed subsidy for 20-49Wp systems is \$80, which would cover 50% of the cost of a good quality 20Wp system. This subsidy is intended for the poorest herder households and will enable them to purchase a basic SHS for lighting purpose with about \$30 of micro-credit, which can be paid back in a year with their normal lighting expenditure (on kerosene or candles). The financing structure for a 20Wp system would be: \$80 subsidy, \$50 out of pocket payment (regular annual expenditure on lighting), and \$30 micro credit.

The proposed subsidy for 50-100Wp system is \$160, covering 40% of the cost of a good quality 50Wp system, and is intended to support herders with expanded needs for electricity. The proposed subsidy of \$1.5-3/Wp is comparable to subsidy levels seen in other SHS market development programs which the World Bank has been (was) involved with. The financing structure for this situation would be: \$160 subsidy, out of pocket payment for the remaining balance, or with a micro credit.

The micro financing system in rural Mongolia is rather extensive and relatively developed. Nomadic herders have already been borrowing from various banks (Khan Bank, the largest of them, has a branch in every soum center, the lowest administrative jurisdiction in Mongolia) and are considered among the most trust-worthy costumers of the banks. The proposed project thus will not allocate resources in arranging micro credits for herders.

The project will implementing a monitoring and verification system for subsidy disbursement to prevent double dipping (buying two smaller systems instead of one larger system). Effects of the smart subsidies will be continuously monitored and adjustments may be made during the project implementation.

Herders' electrification is a top priority on GoM's rural development agenda. This is supported by a drastic increase of co-financing (for smart subsidies) in the proposed project from GoM from a previous \$1.4 million to the currently confirmed \$6.7 million. The un-electrified herder households in Mongolia amount to about 140,000. The proposed project could lead to connections of around 70,000. For the electrification of the remaining unconnected, continued subsidy program will most likely be needed and GoM has indicated to contribute more during the implementation period of the project.

In the wake of the expected large expansion of the rural market of SHSs. A main focus of the proposed project will be the development of the rural sales and service centers which directly serve the herders in terms of delivering systems, assisting in installation, supplying parts and accessories, and providing repairs, all on commercial basis.

The above information is fully reflected in the final Project Document submitted for CEO endorsement and especially in Annex 9: Economic and Financial Analysis.

COMMENT 2: To address productive end-use of electricity the proposal suggests links to the Community-driven Development (CDD) and the rural Information and Communication Technologies (ICT) Projects but no further specification is provided. The proposal should at least elaborate on some possibilities (e.g. lighting for evening activities such as wool-, milk-processing, weaving) and assign a respective part of the budget for the promotion and training on productive end-use.

RESPONSE: The opportunities for productive use of electricity in the soum centers were investigated in the baseline survey carried out during the project preparation. The soum centers were set up mainly as administrative and public service outposts of the Government, providing health care and education services to nomadic herders. The most common (for-profit) productive use of electricity in soum centers was found in small bakeries.

The proposed project will benefit from the CDD project in two aspect: (1) the CDD project has helped to develop and strengthen the micro financing service for herders; and (2) the CDD project is targeted at herders and has accumulated significant knowledge and experiences in working with herders. The proposed project is closely linked to the ICT project which aims at developing telecommunications services in the soums, including internet services for schools and other public or private entities that require improved electricity supply.

COMMENT 3: The soum centers' component is entirely based on the introduction of renewable-diesel hybrid systems although, so far, limited experience of such systems is available, and this

mainly in countries such as Australia and the USA. To justify this risky approach, an evaluation of available experience and a rough assessment of the feasibility in Mongolia should be included, providing figures on technical and financial viability. To substantiate the assertions of cost reduction and improved service cost estimates, economic analysis and tangible arguments referring to existing systems are required. In addition, a rough cost-benefit analysis of increased generation capacity should be compared to energy efficiency and loss reduction measures.

RESPONSE: During project preparation, hybrid system feasibility studies were conducted at 4 sites by the National Renewable Energy Center (NREC) of Mongolia. The project team also performed technical and economic analysis for one representative site, using a state-of-the-art micro-power optimization model developed by the National Renewable Energy Laboratory (NREL) of USA and concluded that a wind-diesel hybrid system represent the least cost option for reliable 24-hr electricity supply. Financial analysis further indicates that such electricity supply is affordable and financially sustainable if initial capital investment in the hybrid system is grant-financed (tariff will cover operation and maintenance costs as well as future capital replacement costs). Depending on income levels of specific soum centers (some are richer than others), some equity contribution to the initial capital investment is considered but will need to be assessed on a case by case basis. Please refer to the final Project Document Annex 9: Economic and Financial Analysis for more detailed information.

COMMENT 4: The feasibility studies are budgeted at 400,000 USD. However, detailed planning and implementation are not explicitly mentioned or budgeted. Local consultants certainly need comprehensive technical assistance to plan and implement hybrid systems. The problem of limited know-how regarding the variety of proposed technological solutions (wind, solar, hydro, hybrid) is certainly a crucial RE-specific barrier also relevant for replicability and needs a much stronger emphasis.

RESPONSE: The total budget for the 20 or so feasibility studies in the project is estimated based on the cost of already completed feasibility studies by NREC. A special institutional strengthening technical assistance is included in the project and will link NREC with international premier renewable energy institutions such as NREL in the US so local capacity in technical assessment and design, including small hybrid system design, will be enhanced. To mitigate potential technical risks, the project adopts two-phased approach in developing hybrid systems with the initial phase focusing on a few pilots before scaling up in the latter phase.

COMMENT 5: It is not clearly specified whether the information centers should be (a) profit-oriented intermediaries linking volume dealers to the end-users and making contracts with local banks to sell micro credits or (b) “neutral advisors” having no or limited profit interest. The proposal should elaborate in more detail on potential institutional models. The proposal does not clearly state who should finally take the responsibility for the equipment quality. As a general approach, the possibility of linking a service system for individual and community systems to achieve synergies, increase the efficiency of training and reduce costs should be analyzed. Both herders and Soum centers could share a (private) service entity / utility and a (public) entity functioning as an independent advisory body representing and safeguarding the consumers’ interests. In any case, the number of entities should be limited, their tasks and responsibilities well defined and no organization should be established which does not pay for itself.

RESPONSE: The Sales and Service Centers (was called information centers at the time of the Council Review) is intended to be profit-oriented and financially self-sustainable. Based on the

investigation during project preparation, the most likely candidates for operators of such centers at the soum level would be veterinarians who have regular contact with and are trusted by herders and soum center technicians who have ready skills. The project will look for other possibilities, such as local NGOs and private businesses, and will experiment a few models in the first 1-2 years of the project implementation. The centers are for the purpose of sales and services and will not be involved in arranging for micro credits. The responsibility for the equipment quality is with the national suppliers, who may also operate their own centers. Detailed implementation arrangements for both the herders and soum centers components are described in the final Project Document Annx 6: Implementation Arrangements.

As indicated above, the project will look for the possibilities of a private entity operates both the soum center electricity system while also provide sales and services for solar home systems for herders.

- b) GEF SECRETARIAT
N/A
- c) REVIEW BY EXPERT FROM STAP ROSTER (IF REQUIRED)
N/A

3. JUSTIFICATION FOR MAJOR CHANGES IN THE PROJECT, IF ANY²
N/A

4. REQUIRED ATTACHMENTS

- a) Project Appraisal Document
- b) Confirmed letters of commitments from co-financiers (with English translations)
- c) Agency Notification Template on Major Project Amendment and provide details of the amendment, if applicable.

² Provide justifications for any major amendments in the project, including an increase of project amount exceeding 5% from the amount approved by the Council. Justification for such amendments and the project document will be circulated to the Council for a four-week review period. For procedures to the approval for major amendments, refer to the Council paper: [Project Cycle Update: Clarification of Policies and Procedures for Project Amendment and Drops/Cancellations. GEF/C.24/Inf.5](#)