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Report No.24040 GUI

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF SDR 4.1 MILLION
(US\$5 MILLION EQUIVALENT)

AND A GEF GRANT

IN THE AMOUNT OF US\$2.0 MILLION EQUIVALENT

TO THE

REPUBLIC OF GUINEA

FOR A

DECENTRALIZED RURAL ELECTRIFICATION PROJECT

APRIL 22, 2002

**Energy Team
Infrastructure Group
Africa Region**

CURRENCY EQUIVALENTS

(Exchange Rate Effective November 12, 2001)

Currency Unit = Guinean Franc (GNF)

1 GNF = US\$0.000529101

US\$1 = 1890 GNF

FISCAL YEAR

January 1 -- December 31

ABBREVIATIONS AND ACRONYMS

AFD	Agence Française de Développement
AfDB	African Development Bank
AFVP	French Volunteers for Progress
AGER	Agence Guinéenne d'Electrification Rurale
BERD	Bureau d'Electrification Rurale Décentralisée
BICIGUI	Banque Internationale pour le Commerce et l'Industrie - Guinée
CRG	Crédit Rural de Guinée
CP	Comité de Pilotage
DEF	Direction des Eaux et Forêts
DNE	Direction Nationale de l'Energie
DRE	Decentralized Rural Electrification
EDG	Electricité de Guinée
ENELGUI	Entreprise Nationale d'Electricité de Guinée
ERD	Electricité Rurale Décentralisée
ESMAP	Energy Sector Management Assistance Program
FERD	Fonds pour l'Electification Rurale Décentralisée
GEF	Global Environmental Facility
GHG	Greenhouse Gas
GoG	Government of Guinea
MHE	Ministère de l'Hydraulique et de l'Energie
MFI	Micro Finance Institution
NGO	Non-Governmental Organization
PDES	Providers of Decentralized Electrification Services
PERD	Programme d'Electrification Rurale Décentralisée
RETs	Renewable Energy Technologies
SHS	Solar Home system
SOGEL	Société Guinéenne d'Electricité
STAP	Scientific and Technical Advisory Panel
UNDP	United Nations Development Program
VAT	Value Added Tax

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GUINEA
DECENTRALIZED RURAL ELECTRIFICATION PROJECT

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MAP(S)
IBRD 31718

P074288 Estimated Disbursements (Bank FY/US\$m):								
FY	2002	2003	2004	2005	2006			
Annual	0.50	1.00	2.00	1.00	0.50			
Cumulative	0.50	1.50	3.50	4.50	5.00			
P042055 (GEF) Estimated Disbursements (Bank FY/US\$m):								
FY	2002	2003	2004	2005	2006			
Annual	0.00	0.60	0.80	0.40	0.20			
Cumulative	0.00	0.60	1.40	1.80	2.00			
Project implementation period: 4 years								
Expected effectiveness date: 08/31/2002 Expected closing date: 06/30/2006								

OCS PAD Form Rev. March, 2000

A. Project Development Objective

1. Project development objective: (see Annex 1)

The project will test institutional, financial and delivery mechanisms to promote better access to electricity in rural and peri-urban areas. In support of that objective, the Project seeks to:

(a) Test institutions, regulations and delivery mechanisms to develop decentralized and affordable village electrification schemes; and

(b) Test financial mechanisms to deliver increased access to electricity and mobilize private sector financing for energy projects in rural communities.

2. Global objective: (see Annex 1)

The Project's global environmental objectives are to:

(a) Remove barriers to the adoption of Renewable Energy Technologies (RETs);
and

(b) Reduce greenhouse gas (GHG) emissions through the substitution of RETs (or other modern electricity supply) for candles, kerosene, and other fossil fuels in rural energy applications.

3. Key performance indicators: (see Annex 1)

The key performance indicators for monitoring the achievement of the project objectives are that, by the end of the project: (a) whether the institutions and regulations put in place have worked reasonably well and contributed to the achievement of project objectives; (b) individual loan collection rates, as a measure of the extent to which the project has been successful in establishing a sustainable delivery mechanism, do not fall below 75 % at the end of the project; (c) the decentralized electrification financing mechanism (*Fonds pour l'Electrification Rurale Décentralisée, FERD*) is operational and has a sustainable source of government financing and financial support from donors; (d) the necessary private sector financing has been mobilized to provide electricity to some 20,000 households by the end of the project; and (e) whether it has been possible to reduce CO₂ emissions by about 30,000 tons by the end of the project, as a result of photovoltaic, and micro-hydro electricity use.

B. Strategic Context

1. Sector-related Country Assistance Strategy (CAS) goal supported by the project: (see Annex 1) Document number: 17183 Date of latest CAS discussion: 10/27/97

The key objectives of the CAS are to: (i) alleviate poverty, (ii) create an environment attractive to private sector investment; and (iii) employment generation. The project supports the main goal of improving the quality of life of low income population by

designing and testing sustainable mechanisms to increase low income household access to affordable electricity services. If successfully implemented, the mechanisms would provide educational benefits through better lighting and economic benefits through household income being supplemented by energy based productive activities day or night. There are also health benefits through the electrification of clinics and better information through the use of telephones and other modern communication equipment. The CAS progress report (report number 22451) which was discussed on 07/24/01 also emphasized the need for rural energy as part of the Government's strategy to fight poverty. The report specifically says that: " The Bank will support rural electrification needs through the Rural Energy LIL".

1a. Global Operational strategy/Program objective addressed by the project:

The proposed project is fully consistent with GEF Operational Program Number 6 (OP 6); *Climate Change: Promoting the Adoption of Renewable Energy by Removing Barriers and Reducing Implementation Costs*. Removal of barriers will make it attractive for the private sector to start investing in decentralized rural electrification schemes, and operate these on a fully commercial basis. Specifically, the Project would (i) initially buy down the relatively high investment costs of RETs; (ii) raise public awareness of the advantages of using RETs, and (iii) reduce initial high transaction costs that result from lack of market knowledge, small market size, and dispersed consumer base. It is expected that by completion, the Project would have demonstrated RETs to be viable business opportunity in Guinea.

2. Main sector issues and Government strategy:

Some 70 percent of Guinea's 6.8 million population live in rural areas. Overall, less than 5% of the population has access to electricity: about 35% of urban households (the capital and large prefectures) and less than 1% of rural households (district or " *sous-prefectures*" level localities). Rural households have no prospects of receiving electricity services based on conventional solutions in the foreseeable future. In peri-urban areas, there are still thousands of potential consumers who are not connected to the grid for technical and/or financial reasons, who use batteries to run their TVs and lights.

Private pico generators are being used by few wealthy and small businesses. At least 10 different types of generators below 5 kVA can be found in Conakry's hardware stores. Small distribution systems at the sous-prefecture level have been observed: entrepreneurs were able to arrange financing mostly for second hand diesel generators and low-cost distribution networks. Consumers are mainly boutiques and small businesses. These operators generally do not provide electricity to households.

The power company, EDG, supplies electricity to the capital, Conakry, and a number of smaller towns. Mining companies and some other large consumers generate electricity for their own use. In addition, there are 24 small diesel and run-of-the-river hydro stations in several towns whose operation is sporadic, inefficient and unreliable. In most rural areas, however, there is no electricity.

System operations had been contracted out for 10 years to a foreign private

operator, SOGEL, under an “*Affermage*” contract. SOGEL's mandate is to operate in urban areas, leaving rural and peri-urban areas essentially without service. In 2001, the *affermage* (or lease) agreement has fallen through due to disagreements between SOGEL and the Government over tariff adjustments and other cost recovery measures that could not be resolved to the satisfaction of both parties. The government has reiterated its commitment to reform and to launch a new reform process in the power sector.

The quality of urban electricity service has improved significantly and consumption increased substantially although largely through urban illegal connections.

The proposed LIL that focus essentially on the rural areas, is not affected by the problems affecting the formal sector.

Government Strategy

The Government's strategy for the power sector that was endorsed by the Bank, is aimed at:

- (a) Ensuring a reliable electricity supply to support economic activities;
- (b) Adopting and enforcing effective economic tariff policies;
- (c) Mobilizing private sector financing for the production, transmission, and distribution of electricity;
- (d) Promoting decentralized electricity supply; and
- (e) Limiting the Government's activities to policy making and regulation of the energy sector.

In June 1998, the Government promulgated Law 97/012/AN, which allows the financing, construction, management, and operation of infrastructure assets by the private sector. With the assistance of the Energy Sector Management Assistance Program (ESMAP), the GoG has also conducted several surveys to develop a framework for a decentralized electrification program. The results of these surveys are similar to what was found in other West African countries:

- (a) Rural consumers and institutions only use small quantities of electricity for lighting, communication, water pumping, and refrigeration. Typically, a rural family uses the equivalent of 20 kWh/month, a load that is too small to justify grid extension over a long distance. Currently, households not connected to the national grid, use kerosene lamps and dry cell batteries for radios, flash lights, etc., and pay a fairly significant amount for this use (\$5-8 per month). If one considers Guinea 1998 GNP per capita of US\$540, this expenditure on fuels represents between 11 and 17% of households' average annual income; and

(b) Individual systems (SHS and solar lanterns) or collective systems (pico-hydro - systems with a capacity not exceeding 100 kW, and hybrid diesel-generator sets) could provide an intermediate solution that would be affordable for large parts of the peri-urban and rural households.

Taking into account the findings of the surveys, the Government has adopted a new strategy for the Decentralized Rural Electrification (DRE). This was reflected in a sector policy letter of February 1998 that calls for:

(a) Establishing a regulatory framework for the DRE (applying to power plants with up to 250 kW of installed capacity), including the liberalization of tariffs on DRE delivery and services, and the elimination of import taxes and VAT on specific DRE equipment;

(b) Creating a small rural electrification office *Bureau d'Electrification Rurale Décentralisée (BERD)* for DRE planning; and

(c) Creating a financing mechanism (*Fonds d'Electrification Rurale Décentralisée*), to be managed by a local financial institution.

3. Learning and Development issues to be addressed by the project:

A Learning and Innovation Loan will allow time to design and test sector institutions and to gain more experience for the development of sustainable mechanisms. Scaling up rural electrification services to the national level would therefore be addressed in a follow-up operation.

This LIL concerns itself with three main barriers: (1) lack of technical capacity to develop and implement decentralized electrification activities; (2) lack of capacity to finance such activities; and (3) the high up-front cost of rural electrification equipment, and particularly of renewable energy technologies (RETs).

The LIL will address the first issue by providing technical assistance for rural electrification planning and formal and on-the-job training to local operators and experts. The LIL will address the second issue by developing with a local commercial bank financial arrangements that will demonstrate to the local financial sector that it is financially rewarding to co-finance such schemes. The LIL will address the third issue by developing a package of subsidies and loans (level, modalities) that will incite private financiers and companies to invest in rural electrification schemes and provide a solid basis for further development of DRE in Guinea.

Lessons to be learned include: (i) how to create as quickly as possible sufficient technical capacity to develop and implement rural electrification projects, and how to make this a sustainable process; (ii) how to increase the participation of local commercial banks in the financing of private rural electrification projects, what levels of subsidy to apply over time, and how to make this a sustainable process; (iii) how to best inform the rural population of the opportunities created to develop rural electrification projects, and how to

best channel any demand through potential providers; and (iv) appropriate regulation/rules for decentralized supplies; terms and condition of licenses (including 'nonexclusive' licenses) and how these could be issued/administered.

The need to develop capacity to design and manage institutions for decentralized rural electrification as well as a need to create a minimum level of technical and financial capacity before launching a wider effort, provide a justification for a LIL.

4. Learning and innovation expectations:

Economic Technical Social Participation
 Financial Institutional Environmental Other

It is expected that this LIL will develop institutions allowing for scaling-up rural access to electricity in Guinea. To this effect, it will put in place mechanisms that, by the end of the project, will have demonstrated their effectiveness in providing rural and decentralized electrification services. This should provide sufficient information and experience to launch a larger program. The project will establish and test how best to use private participation in decentralized rural electrification (DRE), develop financing mechanisms, raise awareness, and reduce the up-front cost of DRE equipment.

C. Project Description Summary

1. Project components (see Annex 2 for a detailed description and Annex 3 for a detailed cost breakdown):

The three (3) components of the decentralized rural electrification LIL to overcome the barriers to more widespread use of DRE activities, are:

Project component 1 : Capacity Building

Technical assistance will be provided to the "*Bureau d'Electrification Rurale Décentralisée*" (BERD) in the monitoring, evaluation and dissemination and replication of activities. Private providers will be assisted in the identification and setting up of electricity service delivery in rural areas under concession arrangements and trained in installation and maintenance of equipment. Village associations will be encouraged to organize service delivery through an operator. Over the duration of the project, the technical assistance will help BERD define priority areas, evaluate DRE proposals, coordinate, supervise and monitor the execution of the various DRE projects.

The aim of the DRE program is to supply electricity services to some 20,000 households in more than 75 villages through photovoltaic, pico-hydro, and diesel (or hybrid) systems. These systems will be paid for by the beneficiaries through a financing mechanism that will be managed by a local commercial bank (BICIGUI). Environmental benefits will result from the use of renewable energy technologies.

Project component 2 : Financing Mechanism and Implementation of the DRE Program

A "*Fonds d'Electrification Rurale Décentralisée*" (FERD) will be created to respond to the lack of long-term credit and the high up-front cost of rural electrification systems (e.g. renewable energy systems).

The Fund resources would come from the general budget, bilateral/multilateral donors, and at a later date, with improvements and the privatization of the power sector, from a kWh levy. The funds of FERD will be used for three general purposes:

(a) to cover the operational cost of managing BERD, which is composed of two items (i) the annual operating cost of BERD; and (ii) the annual cost of the contract with the auditors;

(b) to provide loans to promoters of RE projects approved by the Steering Committee; and

(c) to provide grants to promoters of RE projects approved by the Steering Committee.

The financing plan of an approved project would be constituted, on average, by 50% grant, 25% loan and 25% equity. The grant element will depend on the technology, power and services delivered, geographical setting, the quality of the borrower, etc. As part of its operations, BERD will help fund the feasibility study of PDESs projects. To show its commitment, the PDES will pay a retainer in a bank account at BICIGUI that will go toward its contribution to the project, if the project is accepted. If the project is rejected, the full amount deposited is reimbursed. The eligibility criteria will be the financial, technical, and managerial feasibility of the proposed PDES project.

Project component 3 : Project Coordination and Management

The project will support and strengthen the operation and the capacity of BERD, to coordinate, supervise and monitor the execution of the project through the provision of qualified staff, personnel training, and the acquisition of vehicles and equipment.

Private local investors and beneficiaries are expected to contribute an amount of about US\$8.9 million.

Component	Sector	Indicative Costs (US\$M)	% of Total	Bank financing (US\$M)	% of Total	GEF financing (US\$M)	% GEF financing
1. Capacity building; technical assistance to create and support evaluate DRE proposals, monitoring and evaluation of the activities. Assistance to BERD for dissemination/replication, and staff training. Training of PDES staff. Design of simple environmental guidelines for safe handling and disposal of waste (engine oil, batteries, etc.)	Other Power & Energy Conversion	2.50	14.7	1.00	20.0	0.50	25.0
2. Financing mechanism and technical and financial assistance to implement the five- year DRE program.		12.50	73.5	2.50	50.0	1.50	75.0
3. Project coordination and management.		2.00	11.8	1.50	30.0	0.00	0.0
Global Components		0.00	0.0	0.0	0.0	0.00	
Total Project Costs		17.00	100.0	5.00	100.0	2.00	100.0
Total Financing Required		17.00	100.0	5.00	100.0	2.00	100.0

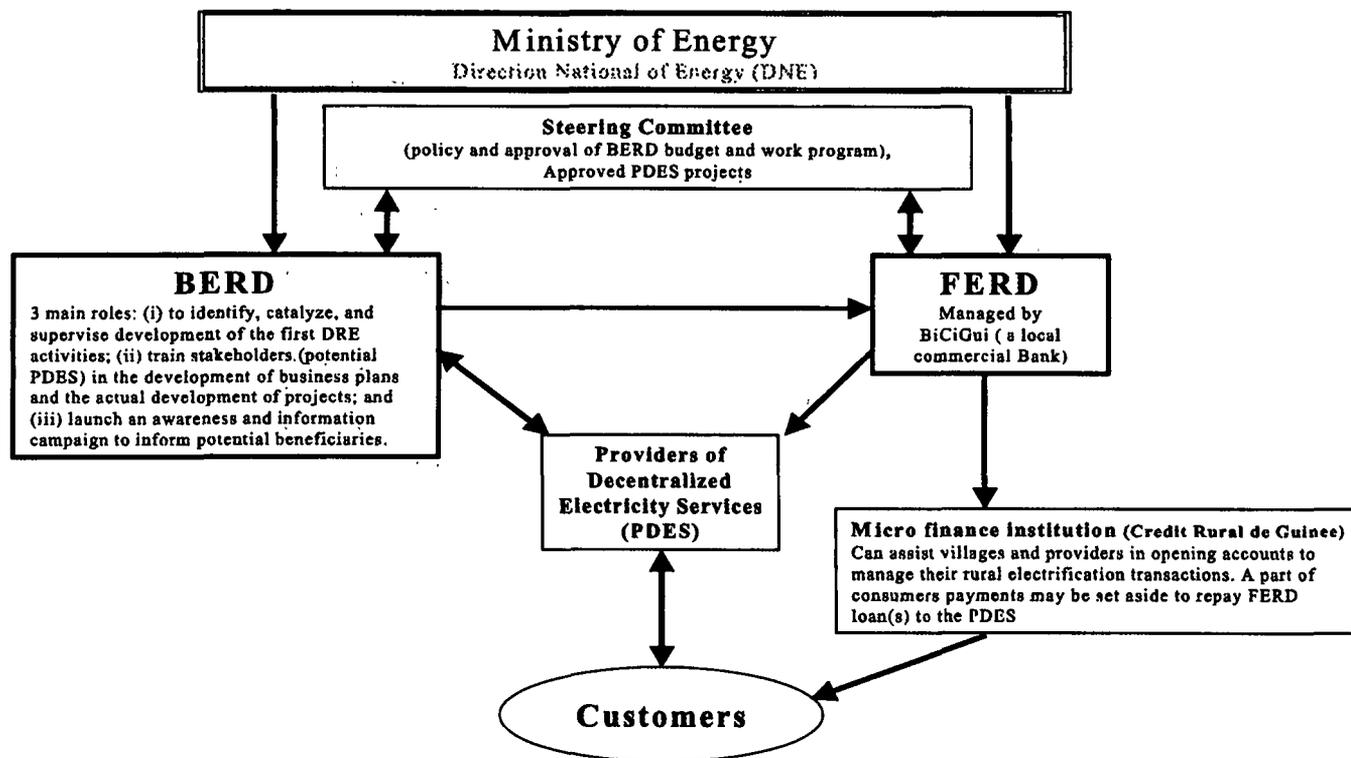
2. Institutional and implementation arrangements:

A summary of the implementation arrangement is presented below:

Implementation period: 4 years: 2002-2006

Executing agencies: Ministry of Energy, BERD and BICIGUI

Project Management: The proposed institutional arrangements rely on: (i) the "*Bureau d'Electrification Rurale Décentralisée*" (BERD); (ii) the financing mechanism (FERD) managed by a private commercial bank; and (iii) a micro finance institution that may assist villages and providers in opening accounts to manage their rural electrification transactions. Other important players are MHE and the private sector. Since this is a Learning and Innovation Loan operation, it is expected that a follow-up operation will be developed to expand rural electrification services on a wider scale. The following diagram illustrates the relationships of the various DRE actors. The institutional responsibilities are detailed in Annex 2.



The regulatory rules and procedures for rural electrification have not yet been tested, and their feasibility will need to be verified. In general, most regulations only apply to the urban electricity supply, simply because there is no significant rural supply. The *Direction Nationale de l'Energie* agrees that:

(a) Priorities of rural electrification: specific projects will be developed on a commercial basis, according to business opportunities as seen by the PDES. DNE or any other government agency will not be involved in establishing priorities;

(b) Sound electricity tariffs: to be set by the PDES, reflecting economic costs. Initially, however, the tariff proposal will have to be accepted by BERD, at the time of the business plan analysis, in order for the PDES to benefit from the financing mechanism advantages. Over time, tariff regulation will be done by a regulatory agency;

(c) No State intervention on PDES selection: this will be left to the appreciation of BERD and the commercial banks financing the PDES's projects; and

(d) The responsibilities of the Government are to: (a) define the area where DRE concessions can be promoted (urban/peri-urban, geographical, level of installed power), (b) define the rules applicable to the PDES, in terms of regulations and contracting; (c) develop fiscal incentives and provide technical and financial support, and (d) once BERD approves a financial contribution to the closure of a particular subproject, MHE will

automatically award the concession.

To obtain a financial contribution under the FERD, PDESs must submit business proposals to BERD in two phases:

(a) First, the PDES will submit project ideas accompanied by a draft business plan. BERD will pre-assess the feasibility of the proposal and indicate the possible level of financial contribution (medium-term loan plus a grant if applicable). If the stakeholders agree to continue with the project, they have to prepare a final business proposal. BERD may assist in this preparation with the financing of studies.

(b) Second, once BERD has reviewed the final business proposal with regards to its financial, technical, and managerial feasibility, BICIGUI will evaluate the credit worthiness of the candidate. Before the project can become active, the PDES will need to obtain financial closure with the bank of his choice and/or finance his share of the investment with his own money. Once financial closure is obtained, BERD will ask DNE to sign the concession contract covering the project.

A. Ministère de l'Hydraulique et de l'Energie (MHE)

MHE's main role, through its *Direction Nationale de l'Energie* (DNE) is to ensure that a proper regulatory framework and sector policies exist, to evaluate their impact and, as necessary, fine-tune these. MHE will award DRE concessions for each project on a no-objection basis, on BERD's recommendation. Finally, it should assist in developing mechanisms that will make decentralized rural electrification a sustainable activity, including a search for funds from donors and a surcharge on electricity tariffs.

DRE and Conventional Electrification: the geographical frontier between the program of decentralized rural electrification (PDRE) and conventional electrification has been defined by DNE as follows:

(a) conventional electrification through extension of existing grids (globally Conakry-Kindia, Kinkon and Tinkisso grids), as well as all prefecture capitals; electrification in these zones is delegated to EDG (or its successor);

(b) the DRE program concerns *Sous-Préfectures* and other similarly-sized localities without perspective of being electrified by grid extension within 10-15 years;

(c) those places where DRE appears to be easiest and more profitable, essentially in terms of customers willingness to pay, number of potential customers, level of income, and potential use of electricity for productive purposes.

B. Steering Committee

A Steering Committee will oversee BERD's functioning and will act as its Board.

The Steering Committee (*Comité de Pilotage*, CP) will comprise at least six representatives: the National Director of Energy (Chairman), EDG (or its successor), the commercial bank in charge of the FERD (BICIGUI), the manager of BERD, and representatives of private firms (preferably a representative of an association of firms such as solar importers, PDES, etc). The CP will approve BERD's annual work program and budget. The CP approves the PDES projects submitted by BERD and decides on the grant to be awarded. Day to day operations are the responsibility of BERD.

C. The "Bureau d'Electrification Rurale Décentralisée" (BERD)

In addition of its competences, the role of BERD will be four-fold: (i) manage the part of the project and identify, catalyze, and supervise development of the first DRE activities; (ii) train stakeholders (potential PDES) in the development of business plans and the actual development of projects; (iii) analyze and evaluate Business Plans presented by PDESs; and (iv) launch an awareness and information campaign to inform potential beneficiaries. It is expected that BERD will ultimately be replaced by a permanent institution to be called *Agence Guinéenne d'Electrification Rurale (AGER)* to be created in the future.

Support to PDESs: BERD would, either directly or through a contract with specialized organizations, provide assistance to PDESs in preparing project and grant applications. BERD would be responsible for assuring that the specialized organizations that are hired, are qualified, verifying that their work program is consistent with the project output, monitoring the interventions and evaluating their effectiveness.

D. The "Fonds d'Electrification Rurale Décentralisée" (FERD)

In order to mobilize private investment for decentralized rural electrification there is a need to establish an attractive investment environment. A concession is a time bound arrangement whereby, a PDES commits to provide certain services in a certain geographical area (for example, 1- 20 villages). Concessions of 10 years appear a lower limit, for three reasons:

- (a) The stakeholder needs a prospect of a sufficient return on investment, and this requires a long enough period;
- (b) 10 years provide a reasonable goal to have a PDES reinvest in the project area; he/she needs to have some secure footing in his/her business before he/she starts to expand; and
- (c) 10-15 years duration is also the average lifetime of DRE equipment.

Each project will give rise to a concession to serve a given area. The concession is a contract between MHE and the provider and transfers the rights for providing electricity services in the project area to the PDES. This is done to give a sense of certainty to the providers, who otherwise may not be interested in investing in a particular area. Given the focus of the project, priority would initially accorded to concessions in the rural areas.

A decentralized rural electrification financing mechanism (FERD) will be managed by a commercial bank with funds that would come from the general budget, bilateral/multilateral donors, and at a later date, from a kWh levy, – to provide loans and grants. This ensures the long term sustainability of the financing mechanism which will be the key instrument for achieving an equitable access to electricity. The commercial financial sector would normally be expected to provide debt financing on commercial terms for RE investments. However, given the current status of Guinea’s financial sector, PDESs would be required to contribute significantly to the financing of their project out of their own funds. The project funds would therefore not supplant the financial sector in providing financing for RE activities.

Only one commercial bank has expressed an interest (BICIGUI, *Banque Internationale pour le Commerce et l'Industrie de Guinée*) in managing DRE activities. It should be noted that other commercial banks in Guinea have not shown an interest in becoming involved at this time. Existing experience with rural credit will be used as much as possible, in particular that of the CRG (*Crédit Rural de Guinée*) and the Bank's water project (PACV, *Projet d'Appui aux Communautés Villageoises*). The cost of the Trust Agent (BICIGUI), who administers the payments to projects approved by the Steering Committee will be agreed in the Subsidiary Agreement to be signed between GoG and BIBIGUI.

FERD would provide:

(a) Loans tied to DRE activities to be made available to eligible PDESs through BICIGUI. The participating PDESs would apply for the loans through the usual procedures of BICIGUI, which would review these applications using prevailing standard policies and procedures. The signing of a subsidiary loan agreement between BICIGUI and the government defining the functions and responsibilities of BICIGUI, under terms and conditions satisfactory to IDA, would be a condition of effectiveness of the credit. IDA and BICIGUI would also enter into a project agreement to define their relationship. BICIGUI would maintain a lending policy, i.e. prudential and solvency, norms, quality of loan analysis, and distribution of risks, acceptable to the Association and BERD, and suitable procedures, as well as an adequate number of suitably qualified staff to enable it to effectively appraise the financial feasibility of DRE activities for which PDESs would be applying for loans.

(b) Grants: in order to buy down the high cost of renewable technologies, grants would be provided to PDESs to encourage their use and dissemination. The adoption by BERD of a manual of procedures detailing the criteria, procedures and guidelines applicable to the provision of such grants is a condition of effectiveness.

The main principles underlying the calculation and payment of grants will be:

- **Grants should be well-targeted for the intended beneficiaries.** The overall objective of a grant support is to assist rural transformation, and the specific objectives, in order of importance, are:
 - Satisfy the need for household lighting and other essential uses (household welfare);

- Satisfy the productive demand for energy (economic development objective to reduce income poverty); and
- Satisfy the public demand for electrification (social development impact of poverty reduction)

Further, for purposes of geographic targeting, the non-electrified areas will be divided into:

- peri-urban, where the needs for grants is relatively low;
- rural, where the need for grants is higher, and these higher grant rates signal the Government's commitment to regional equity.

- **The grant system should include a built-in mechanism for an efficient supply response.** A well-established system for reducing the need for grants is a process of “bidding for minimum grants, given fixed tariff levels”. Under this system, the tariffs to be paid by consumers are predetermined, and potential project developers are required to specify the level of grants they would need to undertake the project, with the lowest qualified bidder being the winner. A variant of this system – “bidding minimum tariff, given fixed grant levels” – is more appropriate for Guinea. In this variant, the level of grants is predetermined, and potential project developers are required to specify the level of average tariff they would charge, with the lowest qualified being the winner. The bidding process will be organized by BERD. This system makes it easier to determine the overall grant budget required in a particular year or longer. In the initial stages of the project where the objective is to demonstrate that decentralized rural electrification is a viable activity and to test various institutional and financial arrangements, the level of the grant would be determined on a case-by-case basis.

- **The procedure for calculating grants payable for particular projects should be objective and transparent.** The calculation of grants payable for particular projects will be based on an assessment of the capital costs of the project, with alternative mechanism – principally the average cost per connection – to provide a check on the level of grants payable.

- **The manner of payment of grants should promote performance/output, instead of being linked to inputs.** This type of linkage of payments directly supports the overall goal of the RE program, i.e., the number of users connected, and private equity financing. It also avoids the problem that when grants are linked to inputs, this often sends wrong signals to developers about the relative prices of various inputs. For example, “soft” interest loans linked to input purchases tend to encourage a capital-intensive approach, such as maintaining higher levels of inventories.

- **Grants should facilitate financing of RE projects.** Grants will be paid at project initiation or during project construction function as equity, in the sense that they reduce the need for the developer’s own equity and/or debt finance from commercial lenders. 70% will be paid by the time of project commissioning, while the remaining 30% will be paid over the first three years, provided that the project connection targets meets agreed output

criteria.

E. Micro finance Institutions

Micro finance institutions could assist PDES and villages in establishing appropriate payment procedures, if they wish to. Initially, BERD will work only with *Crédit Rural de Guinée* (CRG) although over time, other MFIs may be associated. CRG assisted in the preparation of the project, and was the only MFI that has, from the start, shown a keen interest in rural electrification. CRG will *not* provide funds, but it will manage different accounts that are opened at its local branches by villages with a DRE activity - if desired by the PDES. Villages, if they wish to, can organize themselves in many ways. They may, for example, form an new association or use an existing one, such as a water committee, to open an "electricity account" at CRG. Once electricity service starts, part of consumers payments may serve to reimburse the loan(s) FERD has made to the PDES. Thus, the MFI only serves as a channel for the payments from the end-user to the PDES and FERD.

F. Private enterprises, NGO's, and local community organizations

There are several possible ways for the private sector, NGOs and local community organizations to get involved: (i) PDESs; (ii) investors who contract service delivery out to a technical operator; (iii) villages that enter directly into a contract with a technical operator on their behalf; (iv) an NGO that takes the initiative to arrange for service delivery. For example, the French Volunteers for Progress (AFVP) have expressed an interest in submitting projects, other NGOs may be interested as well.

G. Private Management

The development and operation of the DRE schemes are entirely left to the private sector, in terms of ownership and management. This is an important political option of the Government included in the "*Lettre de Politique Sectorielle de l'Electrification Décentralisée*" (February 1998) and confirmed by Law 97/012/AN "*autorisant le Financement, la Construction, l'Exploitation, l'Entretien et le Transfert d'Infrastructures de Développement par le Secteur Privé*" (June 1. 1998). The chosen formula for private participation is the Build, Own and Operate (BOO), which is regulated by the 1998 BOT (Build, Own and Transfer) Law. This includes the creation of small private utilities in peri-urban and rural areas. This approach allows the possibility for a local association to take over the operation after installation, or even developing the whole activity itself, as long as it abides by the rules.

H. Tariffs

Tariffs evidently are crucial for the efficient development of DRE on a commercial basis. GoG has decided not to interfere in tariff setting, and this is an important starting point. Tariffs will be based on the business plans submitted by the PDES. BERD will verify that these tariffs are appropriate in terms of economic and financial criteria and such as to provide a reasonable return to the investor. As a proof of its commitment to the objectives of the project, the GoG has

decided to promote DRE by exempting DRE services and equipment from VAT and/or import taxes.

I. Choice of solution at the village level

The PDESs will provide energy services and households will pay a fixed monthly fee that is negotiated up-front. The choice of technology is at the discretion of the PDESs. There are two solutions actively promoted under the project: (i) solar home systems (photovoltaic electricity) in case of low-density areas, where it is not economic to develop a small distribution network; and (ii) community based generation with small distribution networks, mainly pico-hydro. Under ESMAP studies, six pilot projects were identified. Ensuing discussions with villagers showed the feasibility of the suggested approach as well as the explicitly expressed willingness to participate in the realization of such projects.

Accounting, financial reporting, and auditing arrangements: BERD will be responsible for project financial management including the preparation and production of annual financial statements, in accordance with internationally accepted accounting principles, as well as making arrangements for their certification by a competent and experienced audit firm under terms and conditions acceptable to IDA.

BERD will also monitor all disbursements under the sub-projects and ensure that they are made in conformity with IDA requirements. BICIGUI will submit to IDA, through BERD, annual and quarterly reports on the progress of implementation of DRE loans. A computerized financial management information system, including the manual of procedures, the accounting, budgetary, financial, and internal control systems, will be established within BERD by a reputable consultant and it would be operational at the outset of project implementation.

The design of the financial management system will be based on IDA reporting requirements. BERD will be adequately staffed by competent and experienced professionals, including an administrative and financial specialist. The financial management system will allow for the proper recording of all project-related transactions as well as timely monitoring of expenditures by category and by components.

The records and accounts of all the components of the project would be audited annually by an independent auditor. Regarding loans, the audit firm will review the performance of BICIGUI as well as of the PDESs, and provide specific opinion on the effectiveness and efficiency of the lending procedures. In addition to the audit opinion on the financial statements, the auditor will be required to express separate opinions on the SOEs and the management and utilization of the special account. Finally, the auditor will issue a management report with practical recommendations for improving the project internal control system. The establishment within BERD of a sound financial management system acceptable to IDA and the recruitment of the project auditors would be conditions for effectiveness.

3. Monitoring and evaluation arrangements:

Monitoring, evaluating and permanent learning would be an important dimension of the project as RE delivery mechanisms need to be field tested to make sure that these can be applied on a sustainable basis and on a large scale. Lessons learned during this process would be immediately applied. Two performance reviews would be undertaken by independent consultants to enable the Borrower and IDA to evaluate the implementation experience.

BERD is responsible for all RE monitoring and evaluation and will put in place a mechanism for monitoring. BERD will mainly rely on local consultants and partly on its own staff to undertake the dissemination and the monitoring and evaluation tasks. There are three beneficiary groups: (i) rural households and businesses; (ii) providers and suppliers of equipment and/or investors; and (iii) the banking sector. The monitoring of project performance includes measuring economic, financial, technical, social, and environmental changes on each of these groups as applicable.

The following table summarizes the monitoring topics:

Beneficiary	economic	financial	technical	social	environmental
Rural household		x		x	x
Rural firm (business generated because of electricity availability)		x	x		x
MFI		x			
Provider		x	x		
Investor		x			
Commercial bank		x			
Village	x			x	x
Guinea	x			x	x

The main dissemination channels are: (a) public availability of information from monitoring and evaluation activities; (b) special initiatives to engage policy and operation decision makers and program stakeholders in internalizing the lessons from experience and best practices; (c) use of lessons and best practices in the development of new policies and projects; (d) systematic action on the findings and recommendations that flow from the monitoring and evaluation program; and (e) specific dissemination programs for each

implementing agency and the country focal point, including exchange of good practice with other countries.

D. Project Rationale

1. Project alternatives considered and reasons for rejection:

The proposed project tests the adequacy of incentives to elicit a supply response, the financing mechanism, the appropriate institutional framework, the capacity and the readiness of the private sector to undertake infrastructure projects in rural areas. Little experience on financing infrastructure projects in rural areas exists in Guinea. Introducing untested institutional and financing mechanisms in this environment on a large scale would be extremely risky and could lead to a costly failure. A phased or gradual approach is therefore justified.

The provision of subsidies to buy down the high up-front cost of renewable energy technologies is necessary for private sector involvement in the spreading and use of these technologies. The provision of subsidies also acknowledges the fact that part of the benefits (e.g. reduction of CO2 emissions) are global benefits and therefore not captured by individuals who would therefore be unwilling to pay the extra cost of these technologies.

The alternative of providing short term versus long term loans was rejected because the failure of infrastructure development in rural areas can be precisely traced to the lack of availability of long term financing. Understandably, risk taking by the banking sector in the rural areas, is currently absent and has to be built and nurtured. To ensure sustainability, an effort was made under the project to associate the commercial banking sector in Guinea to the provision of loans but realistically this might take some time. The project will try to demonstrate, taking into account the risks involved, that it is rewarding to finance infrastructure in the rural areas in Guinea.

2. Major related projects financed by the Bank and/or other development agencies (completed, ongoing and planned).

Sector Issue	Project	Latest Supervision (PSR) Ratings (Bank-financed projects only)	
		Implementation Progress (IP)	Development Objective (DO)
Bank-financed			
Increase private participation in power sector	Guinea Power II Project (P001043)	U	U
Independent mini-grids	Sri Lanka Energy Service Delivery (P010498)	S	S
Solar PV	Indonesia Solar Home Systems (P035544)	S	S
	Sri Lanka Energy Service Delivery (P010498)	S	S
	China Renewable Energy (P046829)	S	S
Other development agencies			

IP/DO Ratings: HS (Highly Satisfactory), S (Satisfactory), U (Unsatisfactory), HU (Highly Unsatisfactory)

3. Lessons learned and reflected in the project design:

Key lessons learned from power projects in Guinea, as well as from rural electrification worldwide include:

- The need for long term financing to enhance the ability of the private sector to undertake rural infrastructure schemes, including rural electrification;
- The association and involvement of the local banking sector are important to ensure sustainability;
- The development of consumer credit is necessary to expanding the market beyond cash sales;
- Decentralization of decision making, with demand-driven selection criteria for service expansion;
- Rural electrification should be set up on a commercial basis, with some subsidies generally required, but recurrent cost subsidies undermine sustainability;
- The development impact can be increased by subsidizing access, (i.e. low connection charges instead of consumption) and cost-recovery based tariffs;
- Reduce costs by promoting low-cost equipment and technical specifications; and
- The importance of establishing a framework for project management that can be updated based on implementation experience.

4. Indications of borrower and recipient commitment and ownership:

Indications of the borrower and recipient commitment and ownership are the following: (a) the Government has organized a participatory workshop in October 1997 to discuss issues and options in decentralized electrification (DE), and to listen to stakeholders' concerns and expectations; (b) a letter of sector policy on decentralized rural electrification of February 1998 formalized the Government's commitment for promoting private sector in the DE program; (c) a law promulgated in June 1998 laid down the legal and regulatory framework for private participation in decentralized electrification; (d) the Government has requested and obtained a Project Preparation Facility (PPF) to help prepare the project; and (e) the Government has exempted renewable energy technologies (RETs), from taxes and duties to make them more affordable and help in their dissemination.

5. Value added of Bank and Global support in this project:

The Government of Guinea looks mainly at the Bank for advice in matters relating to its power sector. Through sector dialogue, the Bank is supporting power sector reforms. This, however, will mainly benefit the urban areas; it is important that the Bank also support rural electrification and renewable energy development, so that those who cannot be reached by the electricity grid in the foreseeable future, especially in the rural areas, are not neglected. Furthermore, bilateral and multilateral donors work closely with the Bank and follow its lead in relation to expanding access to electricity in urban as well as urban areas.

IDA and GEF financing are key in bringing down the cost of renewable energy technologies (RETs) and facilitating their adoption in the rural areas. The Government is also

doing its part by exempting RETs from taxes and duties.

E. Summary Project Analysis (Detailed assessments are in the project file, see Annex 8)

1. Economic (see Annex 4):

[For LIL, to the extent applicable]

- Cost benefit NPV=US\$ million; ERR = 7.75 % (see Annex 4)
- Cost effectiveness
- Incremental Cost
- Other (specify)

(a) Tariff setting for DRE services and the proposed financing mechanism are flexible enough to test for the optimal way to provide financing to local providers (an objective of the LIL).

(b) Non quantifiable economic benefits include health improvements, better education, income generation, and better information. The ERR for the project, excluding these benefits, was estimated at about 7.75%.

2. Financial (see Annex 4 and Annex 5):

NPV=US\$ million; FRR = % (see Annex 4)

[For LIL, to the extent applicable]

The financial analysis shows that without the project, the IRR for a PDES to invest in village electrification ranges from 2% (hydro) to about 5% (diesel); and is negative for solar.

With the project, the rate of return to PDES is increased to at least 18%. This provides an attractive incentive for dissemination of decentralized rural electrification. To facilitate this process, the financing mechanism will provide a blend of long-term concessional loans and subsidies, depending on the type of technology to be deployed. The added attraction is the security of tenure whereby a PDES obtains a long-term service "concession" in a particular area.

Cost recovery is the responsibility of the PDES. An MFI has accepted to set up project accounts for villages where the PDES is active to facilitate payments.

3. Technical:

[For LIL, enter data if applicable or 'Not Applicable']

(a) A limited set of technologies will be eligible for financing as the main issue is sustainable delivery of DRE: solar home PV systems; pico-hydro, small diesel generators or hybrids. Only renewable energy equipment will be eligible for direct subsidies from the GEF grant.

(b) Long term sustainability of DRE systems will depend on quality of the individual components as well as on the system design (including proper assembly and installation procedures) and good management of the facilities, meeting consumer's expectations and capacity to pay. These considerations led to consider the 15 and 50 Wp PV systems, up to

100 kW of pico-hydro systems and up to 250 kW of thermal plants for broad dissemination.

4. Institutional:

4.1 Executing agencies:

The LIL will build a permanent national mechanism for RE. BERD will be in charge of the day-to-day management of the project. Key areas of the project financial management have been assessed to ensure agreement with Bank procedures. BERD staffing would be adequate and would include the Director of BERD, an accountant, two technical specialists, a procurement specialist and a financial analyst. BERD would: (a) coordinate individual project activities; (b) supervise the execution of RE projects; and (c) prepare the annual work program, annual budget, accounts and financial statements, progress reports, disbursements applications, and procurement plans.

4.2 Project management:

(a) A major objective of this project is to develop sound institutional arrangements, particularly at the community level. A limited set of institutional arrangements will be tested;

(b) The manual of procedures details the functions and modus operandi of the BERD's Steering Committee (the "*Comité de Pilotage*");

(c) MHE will address the regulatory issues created by DRE activities and help mobilize additional funding for the financing mechanism to make it a sustainable program.

4.3 Procurement issues:

(a) A Public Procurement Reform Program was launched in Guinea in 1997. The purpose of the Program, supported by an IDF Grant, was to enable the Government of Guinea to reform its legal, regulatory and institutional framework related to public procurement operations. It was completed in 2000 with mixed results. While initial measures of procurement reform were undertaken by the authorities, procurement remains weak and is a major stumbling block in project implementation and disbursements. The main causes were identified as (i) inconsistent implementation of procurement laws, rules and regulations; (ii) cumbersome procurement processes and clearances; and (iii) weak procurement capacity in implementing agencies;

(b) To address these issues, a Country Procurement Assessment Review (CPAR) is presently under way and an initial IDA mission was conducted in October 2001. The review process is scheduled to be completed by June 2002. The CPAR's major focus will be: (i) a comprehensive analysis of public sector procurement structure; (ii) a general assessment of the risks associated with the procurement process; (iii) an Action Plan to strengthen public and private procurement processes; (iv) an Action Plan for the training of procurement staff of project implementing agencies and government units.

4.4 Financial management issues:

Audits are required annually for the project, the special account and for FERD. These audits are financed under the project budget and submitted to the Steering Committee. A financial management system for BERD will be put in place by project effectiveness.

5. Environmental: Environmental Category: C (Not Required)

5.1 Summarize the steps undertaken for environmental assessment and EMP preparation (including consultation and disclosure) and the significant issues and their treatment emerging from this analysis.

The project will promote the use of renewable energies and efficient appliances wherever possible. Environmental impacts are expected to be minor due to the very small scale of projects, decentralization of the energy production and use of renewable energy sources. At the global level, these impacts should be positive, as such project will reduce carbon emissions. Simple guidelines will be prepared for the safe handling and disposal of batteries and waste engine oil. The project includes (i) training to ensure that waste oil and used batteries are appropriately disposed of in an environmentally sound manner; and (ii) the preparation of an expanded set of environmental guidelines for handling and disposal .

5.2 What are the main features of the EMP and are they adequate?

Environmental guidelines will be incorporated into the Manual of Procedures of BERD.

5.3 For Category A and B projects, timeline and status of EA:

Date of receipt of final draft: N/A

5.4 How have stakeholders been consulted at the stage of (a) environmental screening and (b) draft EA report on the environmental impacts and proposed environment management plan? Describe mechanisms of consultation that were used and which groups were consulted?

During project preparation MHE staff and ESMAP staff fully prepared six pilot projects in a participatory mode. The outcome was discussed at a national workshop.

5.5 What mechanisms have been established to monitor and evaluate the impact of the project on the environment? Do the indicators reflect the objectives and results of the EMP?

A performance indicator is dedicated to environmental monitoring: CO2 emissions reduced by about 30,000 tons by the end of the project, as a result of photovoltaic, and micro-hydro electricity use.

6. Social:

6.1 Summarize key social issues relevant to the project objectives, and specify the project's social development outcomes.

Community-based provision of public services is relatively new in Guinea and may face several challenges in implementation. Private supply arrangements may encounter resistance from some sections of the population due to a preference for subsidized public supplies by the power company. Resistance could also come for some Government agencies favoring a centralized approach to electrification. An information dissemination program will be carried out by BERD at the village level across the country. The project outcome is expected to lead to more social inclusion and increased equity between urban and rural areas. The project will also lead to a strengthening of organizational capacity and social capital.

6.2 Participatory Approach: How are key stakeholders participating in the project?

Representatives of consumer groups/associations, NGOs, municipalities, equipment suppliers, other private firms, SOGEL, ENELGUI, have been consulted during the ESMAP preparatory activities. Two workshops were held in Conakry to present the ESMAP survey results, and to discuss the DRE program principles. Local consultants were involved throughout. It is expected that French Volunteers for Progress and other NGOs would be instrumental in developing subprojects by assisting PDESs in preparing their business plans.

6.3 How does the project involve consultations or collaboration with NGOs or other civil society organizations?

Consultation and collaboration of consumers, financial institutions, community organizations, and NGOs are an integral part of project implementation. Interaction between all stakeholders is vital if the project is to achieve its objectives.

6.4 What institutional arrangements have been provided to ensure the project achieves its social development outcomes?

Decentralized rural electrification will involve rural communities and villages, financing institutions, representatives of consumer groups/associations, NGOs, municipalities, PDESs, other private firms, EDG, and the Government. The project makes possible relationships between these formal and informal organizations at the local, regional and national levels to ensure access for and serve the needs of consumers in rural and peri-urban areas.

6.5 How will the project monitor performance in terms of social development outcomes?

Some formal relationships already exist such as those between the local, regional and central governments, between rural communities and villages, NGOs and decentralized branches of central Ministries, etc. New relationships will be formed such as those between the private providers of DRE and rural and peri-urban consumers and between consumers and financing institutions, etc. The main indicator of social development outcome is the expansion of decentralized rural electrification schemes to as many rural communities and villages as possible. The proliferation of these schemes should indicate that social cohesion is strong and inclusive and that Guinea is well on its way to achieving more equity between its urban and rural areas.

7. Safeguard Policies:

7.1 Do any of the following safeguard policies apply to the project?

Policy	Applicability
Environmental Assessment (OP 4.01, BP 4.01, GP 4.01)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Natural Habitats (OP 4.04, BP 4.04, GP 4.04)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Forestry (OP 4.36, GP 4.36)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Pest Management (OP 4.09)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Cultural Property (OPN 11.03)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Indigenous Peoples (OD 4.20)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Involuntary Resettlement (OP/BP 4.12)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Safety of Dams (OP 4.37, BP 4.37)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Projects in International Waters (OP 7.50, BP 7.50, GP 7.50)	<input type="radio"/> Yes <input checked="" type="radio"/> No
Projects in Disputed Areas (OP 7.60, BP 7.60, GP 7.60)*	<input type="radio"/> Yes <input checked="" type="radio"/> No

7.2 Describe provisions made by the project to ensure compliance with applicable safeguard policies.

The project includes (i) training of PDESs to ensure that waste oil and used batteries are

appropriately disposed of in an environmentally sound manner; and (ii) the preparation of an expanded set of environmental guidelines for handling and disposal.

F. Sustainability and Risks

1. Sustainability:

This project is a pilot project that will, if successful, be replicated on a larger scale to increase access to electricity in rural and peri-urban. Its performance will be closely monitored. Measures that will ensure the project sustainability are: (a) valuable and cost-effective services provided to the population that otherwise would not have had access to electricity; (b) direct financial participation of all beneficiaries; (c) strict minimum technical, financial and systems management standards, ensuring that the systems are safe and regularly maintained by trained and experienced service providers; (d) implementation of a sound and transparent regulatory framework; and (e) financial incentives provided to service providers. Future cost reductions are also expected to play a role in enhancing sustainability: village hydro and solar home systems are expected to benefit from cost reductions due to economies of scale and technical progress.

The creation of the decentralized electrification Steering Committee comprising private and public sector representatives, will also strengthen the institutional and financial sustainability of the proposed project.

2. Critical Risks (reflecting the failure of critical assumptions found in the fourth column of Annex 1):

Risk	Risk Rating	Risk Mitigation Measure
<p>From Outputs to Objective</p> <p>The new regulatory framework is well accepted by the private sector and creates a good business climate for successful private investment for DRE projects.</p>	M	Build ownership of DRE by the population, rural communities and political authorities. Active participation of local private sector.
<p>The LIL is followed up by a scaled up DRE Program.</p>		If the LIL is successful, it will be followed by a scaled up DRE program.
<p>Costs of decentralized electricity services and/or on no conventional grid connection systems not affordable to the beneficiaries.</p>	M	1. Adaptation of the design of the financing mechanism by adjusting credit terms to the providers; 2. GEF support; 3. Choose appropriate area.
<p>Local commercial banks fail to deliver rural credit.</p>	S	1. Extensive consultations with interested local banks; 2. Progressive commitment of the commercial bank, with risk assumed by GoG; 3. Close monitoring and annual assessment of bank activities.
<p>Lapses in Government commitment to the project and slow adaptation of poor families and communities to self-help approach</p>	S	1. Built-in public-private partnership during project implementation, 2. Internalize participation and consultation among key stake holders.

Credit program fails due to shortcomings of local banks or due to high delinquency rates.	M	<ol style="list-style-type: none"> 1. Ensure progressive commitment of local banks, and motivation 2. Down payment by beneficiaries and by providers based on risk levels, 3. Ensure quality assessment by BERD and bankable proposals with TA support. 4. Design credit features that would minimize this risk
Project sustainability after closing of Credit	M	<ol style="list-style-type: none"> 1. Provide private sector financial incentives to pursue these activities and mechanism to make BERD financially viable. 2. Ensure GoG continue political commitment.
Political opposition to: (i) Opening up of public services to private/profit making entities. (2) Abolishing uniform pricing of electricity.	M	<ol style="list-style-type: none"> 1. Information and communication campaigns 2. Lobbying by local communities to change perceptions. 3. GoG has indicated that DRE tariffs will be unregulated and based on delivery costs.
From Components to Outputs Lack of transparency in selecting DRE proposals. Insufficient local responsiveness/initiative.	M	<ol style="list-style-type: none"> 1. Setting-up Steering Committee, BERD 2. Reliance on private sector and quality planning. 3. Large information of beneficiaries, other interested parties.
Incentives are not sufficient for development of DE village units by private operators	M	Carefully selected first activities, studies carried out in timely fashion, regulatory framework conducive to carry out such activities.
Overall Risk Rating	M	

Risk Rating - H (High Risk), S (Substantial Risk), M (Modest Risk), N(Negligible or Low Risk)

3. Possible Controversial Aspects:

None

G. Main Conditions

1. Effectiveness Condition

(a) Recruitment of the remaining BERD staff (a procurement specialist, two technical experts and a financial specialist) having qualifications and experience satisfactory to IDA. (TORs are ready and a local consultant will be recruited to advertise and interview candidates. This procedure has already been used in the recruitment of the director of BERD and the accountant);

(b) Adoption of a manual of procedures by BERD, including administrative and operational aspects. The manual of procedures will detail the criteria, procedures and guidelines applicable to the provision of grants to buy down the high cost of renewable energy technologies. (A draft already exists);

(c) Signing of a Subsidiary Agreement between BICIGUI and Government under terms and conditions satisfactory to IDA;

(d) Establishment of an adequate financial management system that is satisfactory to IDA which ensures proper monitoring and implementation of project activities. (The accountant has already been recruited. What remains is the acquisition of the financial software and the training of the accountant in its use); and

(e) Appointment of the project auditor under terms and conditions satisfactory to IDA. (TORs already exists).

2. Other [classify according to covenant types used in the Legal Agreements.]

None

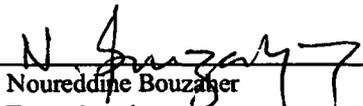
H. Readiness for Implementation

- 1. a) The engineering design documents for the first year's activities are complete and ready for the start of project implementation.
- 1. b) Not applicable.
- 2. The procurement documents for the first six months' activities are complete and ready for the start of project implementation; and a framework has been established for agreement on standard bidding documents that will be used for ongoing procurement throughout the life of LIL
- 3. The LIL's Implementation Plan has been appraised and found to be realistic and of satisfactory quality.
- 4. The following items are lacking and are discussed under loan conditions (Section G):

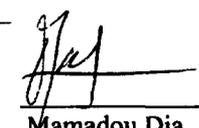
The activities of the first six months will include procurement activities and involve the recruitment of consultants for the recruitment of the personnel of BERD, the finalization of the manual of procedures of BERD, and the preparation of the bidding for the first DRE schemes.

I. Compliance with Bank Policies

- 1. This project complies with all applicable Bank policies.
- 2. The following exceptions to Bank policies are recommended for approval. The project complies with all other applicable Bank policies.


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Team Leader


M. Ananda Covindassamy
Sector Manager/Director


Mamadou Dia
Country Manager/Director

Annex 1: Project Design Summary
GUINEA: Decentralized Rural Electrification Project

Hierarchy of Objectives	Key Performance Indicators	Data Collection Strategy	Critical Assumptions
<p>Sector-related CAS Goal:</p> <p>1. To foster rapid, broad based and private sector-led growth and increase the access to electricity in rural areas in an economically and environmentally sound manner with GEF support.</p> <p>2. Promote community based self-help in the areas of social and economic infrastructure.</p> <p>3. Promote the development of a rural private sector.</p>	<p>Sector Indicators:</p> <p>1. Improved household conditions due to provision of decentralized electricity.</p> <p>2. The financing mechanism is sustainable.</p>	<p>Sector/ country reports:</p> <p>Continuing Bank dialogue on power sector restructuring</p>	<p>(from Goal to Bank Mission)</p> <p>1.1. Lack of commitment from GoG to attract local private sector financing</p> <p>1.2. Lack of interest from villages and/or private sector.</p> <p>1.3. Political, social and economic stability.</p>
<p>Follow-on Development Objective:</p> <p>Scaling up of DRE activities</p>	<p>AGER created</p>	<p>AGER reporting</p>	

<p>GEF Operational Program: Promote the adoption of Renewable Energy technology by removing barriers and mitigate CO2 emissions</p>	<p>1.1 Increased share of renewable energy technology in electricity generation.</p> <p>1.2 Avoided CO2 emissions: target >30 kt CO2 by the end of the project.</p>	<p>BERD reporting</p>	<p>Demand for all DRE options can be generated at the village level.</p>
<p>Project Development Objective: The project objective is test institutional, financial and delivery mechanisms to promote better access to electricity in rural and peri-urban areas.</p>	<p>Outcome / Impact Indicators: (a) whether the institutions and regulations put in place have worked reasonably well and contributed to the achievement of project objectives; (b) individual loan collection rates, as a measure of the extent to which the project has been successful in establishing a sustainable delivery mechanism, do not fall below 75 % at the end of the project.(c) the decentralized electrification financing mechanism (<i>FERD</i>) is operational and has a sustainable source of government financing and financial support from donors; and (d) The necessary private sector financing has been mobilized to provide electricity to some 20,000 households by the end of the project.</p>	<p>Project reports: DRE financing mechanism annual reports, Steering Committee annual reports, Bank supervision missions Special studies</p>	<p>(from Objective to Goal) Firmly established rural electricity framework under appropriate standards, norms, and tariffs. Sustained willingness of stake holders to be involved in financing and in managing electrification schemes. Government continues its support to the financing mechanism.</p>
<p>Global Objective:</p>			

Hierarchy of Objectives	Key Performance Indicators	Data Collection Strategy	Critical Assumptions
<p>Output from each Component: A financing mechanism for the PDES at the community level</p> <p>Sustainable replicable schemes for the provision of electricity services at community level</p> <p>The new regulatory framework for the decentralized electrification sub-sector is in place</p> <p>A learning and evaluation system is established to draw lessons from the project</p>	<p>Output Indicators:</p> <p>1.1. A commercial bank manages on a sustainable commercial basis the long term DRE credits and the DRE grant facility. 1.2. Loan collection rates do not fall below 75% by the end of the project.</p> <p>2.1. At least 10 local consulting firms or NGOs and 20 providers of electricity services have received training. 2.2. Some 20,000 households in more than 75 villages have access to DRE at the end of the project.</p> <p>3.1. Independent consultants have, by the end of the first year developed indicators to measure; (i) cost-effectiveness and technical performance of BERD and FERD; (ii) technical and economical efficiency and profitability of the tested DRE schemes; (iii) sustainability of the DRE financing mechanism, and (iv) effectiveness of project and private sector involvement to improve access of the poor to electricity services.</p>	<p>Project reports:</p> <p>1.1 BERD Progress reports 1.2 Commercial bank disbursement reports, 1.3 Evaluation reports</p> <p>2.1. BERD activity reports, 2.2. Commercial bank disbursement reports, 2.3. Periodic evaluation reports, 2.4. Final Evaluation report.</p> <p>3.1. Feedback from PDES 3.2. BERD Progress reports.</p> <p>MHE reports.</p>	<p>(from Outputs to Objective)</p> <p>The new regulatory framework is well accepted by the private sector and creates a good business climate for successful private investment for DRE projects.</p> <p>The LIL is followed up by a scaled up DRE Program</p> <p>Costs of decentralized electricity services and/or on no conventional grid connection systems not affordable to the beneficiaries. Local commercial banks fail to deliver rural credit</p> <p>Political and economic instability Lapses in Government commitment to the project and slow adaptation of poor families and communities to self-help approach Credit program fails due to shortcomings of local banks or due to high delinquency rates.</p>

		<p>Project sustainability after closing of Credit</p> <p>Political opposition to:</p> <p>(i) Opening up of public services to private/profit making entities.</p> <p>(2) Abolishing uniform pricing of electricity.</p>
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Annex 2: Detailed Project Description
GUINEA: Decentralized Rural Electrification Project

Objectives

The Project supports the Government in implementing its strategy for increasing access to electricity in rural and peri-urban areas. In order to achieve this through a maximum of private sector involvement, the project intends to create a technical and financial capacity to develop decentralized rural electrification projects at the village level.

In addition, the project's global environmental objectives are to remove barriers to application, implementation and dissemination of renewable energy technologies (RETs), and to reduce greenhouse gas (GHG) emissions. To this end RETs will be promoted.

By Component:

Project Component 1 - US\$2.50 million

Capacity Building. Technical assistance will be provided to the "*Bureau d'Electrification Rurale Décentralisée*" (BERD) in the monitoring and evaluation and, dissemination and replication of activities. Private providers will be assisted in the identification and setting up of electricity service delivery in rural areas under concession arrangements and trained in installation and maintenance of equipment. Village associations will be encouraged to organize service delivery through an operator. Over the duration of the project, the technical assistance will help BERD define priority areas, evaluate DRE proposals, coordinate, supervise and monitor the execution of the various DRE projects.

The aim of the DRE program is to supply electricity services to some 20,000 households in more than 75 villages through photovoltaic, pico-hydro, and diesel (or hybrid) systems. These systems will be paid for by the beneficiaries through a financing mechanism that will be managed by a local commercial bank (BICIGUI). Environmental benefits will result from the use of renewable energy technologies.

Technical and financial capacity needs to be created to develop village level electrification projects. Some technical capacity, mainly in urban areas, is available that needs to be developed and redirected to start developing rural and peri-urban decentralized electrification projects. It is expected that this will take several years before sufficient professional operators exist that can continue to provide and expand rural electricity services without Project assistance. The same holds for financial services. Although financial services are available in urban areas, there is limited experience in rural areas.

Project Component 2 - US\$12.50 million

Financing Mechanism and Implementation of the DRE Program. A *Fonds d'Electrification Rurale Décentralisée* (FERD) will be created to respond to the lack of long-term credit and the high up-front cost of rural electrification systems (e.g. renewable energy systems).

The Fund resources would come from the general budget, bilateral/multilateral donors, and at a later date, with improvements and the privatization of the power sector, from a kWh levy. The funds of FERD will be used for three general purposes:

- (a) to cover the operational cost of managing FERD, which is composed of two items (i) the annual operating cost of BERD; and (ii) the annual cost of the contract with the auditors;
- (b) to provide loans to promoters of RE projects approved by the Steering Committee; and
- (c) to provide grants to promoters of RE projects approved by the Steering Committee.

The financing plan of an approved project would be constituted, on average, by 50% grant, 25% loan and 25% equity. The grant element will depend on the technology, power and services delivered, geographical setting, the quality of the borrower, etc. As part of its operations, BERD will help fund the feasibility study of PDESs projects. To show its commitment, the PDES will pay a retainer in a bank account at BICIGUI that will go toward its contribution to the project, if the project is accepted. If the project is rejected, the full amount deposited is reimbursed. The eligibility criteria will be the financial, technical, and managerial feasibility of the proposed PDES project.

A Fonds d'Electrification Rurale Décentralisée (FERD) will be put in place to respond to the lack of long-term credit and the high up-front cost of renewable energy systems. Eligible providers of decentralized electricity services (PDESs) will have access to: (a) loans which would facilitate access to capital to a sufficiently large number of PDESs and thus promote competition and emulation in the sector; and (b) grants: The grant is variable and will depend on the technology, power delivered, geographical setting, the quality of the borrower, etc. Other criteria may be added and/or the current ones modified or changed by BERD. The eligibility criteria are defined in the manual of procedures of BERD.

1. The financing mechanism will be guided by the following basic principles:

- (a) foreign exchange risk of funds on-lent to the private commercial bank is supported by the government. In compensation for the risk taken, the government will add about 4 to 5% to the IDA rate and making sure that: i) the commercial bank has a margin that would keep it engaged in decentralized rural electrification; and ii) the lending rate to the provider of decentralized electricity services (PDES) is attractive;
- (b) promoting the economic viability of DRE operations which will be financed by a mix of loans and subsidies;
- (c) bringing the private commercial bank to gradually increase its financial involvement as the project progresses; and
- (d) follow the rules and procedures of the commercial bank to make the project sustainable and to avoid distorting the financial market.

2. The resources of the financing mechanism could be constituted in part by funds deposited

by the government of Guinea at BICIGUI. The funds would be allocated to loans and grants and released according to the project forecasted needs. Funds not yet disbursed by the commercial bank would be remunerated at the savings rate.

3. The role of the commercial bank: The commercial bank will manage the loans and grants funds under terms and conditions defined under contract with BERD. The bank will use its own criteria for granting a loan and therefore will be solely responsible for the loan decision on projects approved by BERD.

Project Component 3 - US\$ 2.00 million

Project Coordination and Management. The project will support and strengthen the operation and the capacity of BERD, to coordinate, supervise and monitor the execution of the project through the provision of qualified staff, personnel training, and the acquisition of vehicles and equipment.

Institutional Responsibilities

	<i>Nominates</i>	the members of the Board
Ministry of Energy	<i>Appoints</i>	Director of the <i>Bureau d'Electrification Rurale Décentralisée (BERD)</i>
	<i>Approves</i>	the RE Strategy & annual status report for presentation to Cabinet and Parliament
		the auditor for use of FERD funds
	<i>Awards</i>	licenses to operators
BERD	<i>Tasks</i>	
		Procedures for:
		- Evaluation of projects and processing of applications for DRE-funding
		- Forms for Project Presentation & Funding Application documents
		- Tendering of programs and consulting jobs with outside suppliers & contracting
		- Approves business plans for proposed subprojects
		- Grants allocation
		- FERD oversight
		Identification and supervision of DRE activities
		Training of stake holders in development of business plans and projects
		Processes DRE-funding applications and send them to BICIGUI
		Provides information to and collaborates closely with the private sector, RE businesses and with provincial and local authorities
		Prepares and publicizes RE database on projects, costs and socioeconomic conditions
		Answers requests from potential investors and public for information on RE project issues
		Organizes RE awareness campaigns, collaborating with other stake holders (NGOs, etc.)
		Organizes outreach activities to get feedback from rural population, collaborating with civil society and others
		Provides RE regulatory advice to the Ministry of Energy
		Monitors implementation progress of funded projects and prepares progress reports

		Conducts monitoring & evaluation of RE program progress and impact.
		training to ensure that waste oil and used batteries are appropriately disposed of in an environmentally sound manner and preparation of an expanded set of environmental guidelines for handling and disposal .
BERD Director		
	<i>Contracts</i>	FERD Auditor
	<i>Supervises</i>	BERD operation
		FERD operation
		Prepares draft for Minister's annual report on status of RE plan fulfilment
		Prepares annual budget proposals for use of FERD funds for Steering Committee approval
Steering Committee		Division of FERD funds among operation, investment grants, programs
		Eligibility Criteria for grant support and fixes annual grant rates
		Approves annual budget proposals for use of FERD funds
		Annual operating budget and annual work program of BERD
		Draft RE Strategies & Policies for submission to the Minister of Energy
Auditor	<i>Supervises</i>	The use and administration of FERD and prepares annual audit reports

Annex 3: Estimated Project Costs
GUINEA: Decentralized Rural Electrification Project

Project Cost By Component	Local US \$million	Foreign US \$million	Total US \$million
Capacity Building	0.20	2.00	2.20
FERD	0.50	10.80	11.30
Project coordination and management	0.10	1.45	1.55
PPF	0.00	0.15	0.15
Total Baseline Cost	0.80	14.40	15.20
Physical Contingencies	0.20	0.60	0.80
Price Contingencies	0.35	0.65	1.00
Total Project Costs¹	1.35	15.65	17.00
Total Financing Required	1.35	15.65	17.00

Project Cost By Category	Local US \$million	Foreign US \$million	Total US \$million
Goods	0.50	11.30	11.80
Works	0.44	0.84	1.28
Consultants' services, studies and training	0.41	3.51	3.92
			0.00
Total Project Costs¹	1.35	15.65	17.00
Total Financing Required	1.35	15.65	17.00

¹ Identifiable taxes and duties are 0 (US\$m) and the total project cost, net of taxes, is 5 (US\$m). Therefore, the project cost sharing ratio is 100% of total project cost net of taxes.

Annex 4
GUINEA: Decentralized Rural Electrification Project

Incremental Costs and Global Environmental Benefits

Broad development goals and baseline

Development Goals

The proposed activities are embedded in the Guinea - Policy Macroeconomic Framework Paper (1998-2000) and will support the government strategy to promote access to electricity especially in remote/rural areas by encouraging private entrepreneurs in the provision of economic village infrastructures (Decentralized Rural Electrification GoG policy letter, February 1998). The specific project objectives include promoting the development of clean, renewable energy sources.

Baseline

There is a very low rate of rural electrification in Guinea (about 1%) with most rural households meeting their lighting and small power needs with kerosene and dry cell batteries. Rural electrification has not been successful in Guinea for a number of reasons, principally the low density of rural population which results in an extremely high cost for grid extension, high consumer connection costs, and a lack of investment capital to expand distribution systems.

According to ESMAP- GoG survey results, kerosene represented the primary source of lighting in rural areas with an average household expenditure between 6 and 7 US\$ per month. The dry cell batteries are the second source of lighting (flashlight) and the only one for radio, with an average household expenditure between 4 and 5 US\$ per month. Guinean households have an ability to pay about US\$ 10/month for a sustainable access to electricity based upon current expenditures on modern forms of energy including SHS and pico-hydro. Thus there is good evidence to suggest that the potential for decentralized electrification is high.

Thus, the baseline scenario is that these households/communities will continue to rely on fossil fuel for their basic electricity needs.

ENVIRONMENTAL POLICY AND RURAL ELECTRIFICATION

Government is pursuing an overall goal of promoting rural electrification through private entrepreneurs. The Government, through this project, seeks to increase rural access to electricity by providing an environmentally clean source of energy by involving the business community that is now developing decentralized energy options with SHS.

There are some SHS available within the current market though they are relatively costly as compared to some other countries, and reflect the fact that not many systems are in use resulting

in high unit costs. Countries with established and competitive markets such as the Dominican Republic or Sri-Lanka have much lower system costs.

Although the SHS is likely to be best option to meet the needs of households not already connected to the grid, most cannot afford the high start-up costs of such systems. ESMAP results show that these households are willing to spend the same proportion of their incomes (and even more) on better energy services, which improves their quality of life or enables them to become more productive. But they can only do so if they receive credit and are allowed to pay back the costs in small monthly installments over many years. The problem is that these potential customers often cannot obtain the necessary credit and there is no technical support available locally making it difficult for them to obtain better lighting.

Global Environment Objectives

CO2 Abatement

The global environment objective is to mitigate carbon emissions resulting from the use of kerosene for lighting by rural households in Guinea. Total CO2 emissions are expected to be reduced by about 30,000 tons by the end of the project and by about 100,000 tons over the economic life of the project. This mitigation is the rationale for the GEF grant and indicates the international community's WTP for reduced CO2 emissions.

The project supports the GEF climate change Operational Program #6 aimed at promoting the adoption of renewable energy by removing barriers and reducing implementation costs. By making it possible for private entrepreneurs to invest and manage village level electricity services, the project will open the way to a fully commercially based decentralized electrification.

BASELINE PROGRAM

The current baseline is for continued use of kerosene lanterns and disposable batteries to meet the lighting needs of the rural population. All rural consumers would continue to use these two options to meet their primary lighting needs. Despite the existent of some marketing of SHSs, they cannot not successfully be introduced into rural areas due to the lack of sufficient financing and scale to facilitate a successful penetration into the targeted rural markets.

GEF Alternative

The GEF alternative to the baseline scenario is the provision of "electricity services" to about 20,000 households over a five-year period through the promotion of at least 5,000 SHS in 50 villages and 80 pico-hydro associated with low-cost local grids. This objective will be reached through the creation of specific technical (BERD) and financial (FERD) institutional supports which will be to providers of decentralized electrification services (PDESs) benefit. To success in this main objective, the GEF alternative will also include capacity building, markets development activities, and sub-sector policy reform which all are necessary to remove the identified barriers.

The role of the GEF funding would be to meet the incremental costs of supplying renewable

energy rather than the baseline equipment and support for the market development activities.

Scope of the analysis

There are two sets of project benefits, those that accrue directly to the households and those which accrue to the global environment and both of these are considered in the analysis. The analysis is made from the point of view of the country and the beneficiary households. The point of view of the concessionaire is not covered in the scope of the analysis as the nature of the concession has yet to be determined.

Direct benefits to households

Households benefit in numerous ways, many of which are difficult to quantify. Generally, however, the following benefits result from the availability of electricity in the home:

- (a) Access to electricity allows the use of radio and television, connecting individuals with the social and economic mainstream of Guinea;
- (b) Improvements in lighting quality and quantity extend the working day and permit the possibility of income generating activities after dark;
- (c) Improvements in lighting quality and quantity lead to better conditions under which children are able to read and study. There is a long-term positive effect on children education and learning; and
- (d) Reduction of indoor pollution contributing to improved health.

The benefits to households can be measured by their willingness to pay (WTP) for the improved electricity service. Deriving a figure for households' WTP is complex since it is the sum of the actual payments made for the SHS or pico-hydro systems by the household plus the consumer surplus. While actual payments can be determined, it is not possible to measure the consumer surplus. Hence the project benefits will be somewhat understated.

Direct Benefits to the Global Environment

Global environment benefits accrue from CO₂ emissions that are avoided when kerosene is replaced by renewable energy. The mitigation is the rationale for the GEF grant and indicates the international community's WTP for avoided CO₂ emissions. The CO₂ emissions resulting from the manufacture, transport, and erection of the equipment were not considered. The overall avoided CO₂ emissions are estimated at about 30,000 tons by the end of the project and by about 100,000 tons over the economic life of the project. Mitigation of other pollutants, such as SO₂ and NO_x, were not evaluated.

BASELINE AND GEF COSTS

Baseline Costs

Current costs associated with the delivery of energy services to rural populations is based upon continued use of kerosene lanterns and disposable batteries by rural communities. It is assumed that project benefits of electrification is equivalent to the avoided baseline costs. WTP was not used because of a lack of accurate data.

For small consumers, the first cost associated with the purchase of two kerosene lanterns is \$24, total consumption of about 88 liters annually and a net present value of operating costs of about \$370 over a fifteen year equipment life. The levelized cost is about \$5/month. Energy output is equivalent to a 20 watt SHS.

Medium consumers will use both lanterns and disposable batteries. The first cost associated with the purchase of three kerosene lanterns is \$36, total consumption of about 135 liters annually and a net present value of operating costs of about \$743 over a fifteen year equipment life. Disposable dry cell battery use is about \$28/year. The levelized cost is about \$10/month. Energy output is equivalent to a 20 watt SHS.

Rural residents without access to decentralize energy grids, (GEF Large consumers - Pico-hydro alternative), will still use both lanterns and disposable batteries. The average energy use of these consumers is about 40 watt with about 200 consumers per decentralized energy system. The first cost associated with an equivalent amount of energy (40 watts) is the purchase of three kerosene lanterns is \$36, total consumption of about 135 liters annually and a net present value of operating costs of about \$743 over a fifteen year equipment life. Disposable dry cell battery use is about \$28/year. Total system cost for the base case alternative of kerosene lanterns and batteries for 200 households is \$221,027. The levelized cost is about \$2,704/month. Energy output is equivalent to a 10 kW pico-hydro/diesel system with a thirty year life.

GEF Costs

The additional cost of the GEF Alternative scenario for the renewable energy technology dissemination are estimated at US\$ 2,067,355 as detailed below:

Renewable energy activities	US\$
TA for BERD	500,000
Financing mechanism for SHS buyers and Providers of Decentralized Electrification Services	1,567,355
Total	2,067,355

Baseline and GEF Alternative Uses and Costs Compared

Renewable energy solutions are more expensive than the baseline solutions and their costs are unlikely to decrease until local capacity increases and economies of scale lower the price as the market grows. A pilot program of innovative decentralized electrification schemes can help support private entrepreneurs to invest in this sector. The improved service provided by PV in comparison with kerosene and gas can be expected to increase willingness to pay of at least some buyers. Current use of energy equipment is given below.

Based on ESMAP survey data, the incremental cost of PV systems for households, as compared to baseline solutions, reveals a 15-year life cost of US\$ 245 for the 20 Wp systems, a cost of US\$ 427 for the 50 Wp systems, and a cost of US\$ 10,567 for the pico-hydro. The Table below provides a summary of incremental cost per unit

Incremental Cost per System (US\$)

	Incr.Cost/Unit	Incremental Cost/Wp
20Wp	245	12.25
50Wp	427	8.54
10kW Pico-hydro	10,567	1.06

Incremental cost was calculated using the following baseline assumptions as compared to the GEF option, as noted in the Table below.

Household type	Baseline Provision	GEF Provision
	Light	Electricity
Small consumer	2 kerosene wick lamps	-
Medium consumer	3 kerosene wick lamps	8 R20 batteries/month
Large consumer/ Mini-grid	Lighting for 200 families (3 kerosene wick lamps per family)	Electricity for 200 families (8 R20 batteries/month per family)
		20Wp SHS 50Wp SHS 10kW Pico-hydro/diesel (or hybrid) (200 families)

The concessionaire/DRE provider will be given latitude to meet the demands of the market in terms of system type and size. It is difficult to make exact comparisons between the light provided by a kerosene or LPG lamp and that from a fluorescent bulb as may be used in an SHS because quality of light and convenience are not taken into account. Incremental costs have been based on estimated prices of equipment a concessionaire might be expected to pay for equipment, and not current prices which are significantly higher because such equipment that is bought privately tends to be one-off purchases.

Levelized Monthly Cost (LMC) is used for comparison with existing levels of payment.

Investment costs are expressed as sum of the up-front cost of the system and the present value of the running costs. A discount rate of 12% and a lifetime of 15 years is used.

System	LMC (\$)	LMC of baseline (\$)	NPV, Lifecycle Cost, GEF (\$)	NPV, Lifecycle Cost, Base (\$)
20Wp SHS	7.80	4.80	639	394
50Wp SHS	15.10	9.90	1,234	807
10kW Pico-hydro	2,834	2,704	231,594	221,027

Incremental costs

The incremental costs of each system can be calculated from the information in the table above. The table below presents the incremental cost and the expected rates of deployment for each type of system.

System	Annual Deployment, Year					Incremental Cost(US\$)
	1	2	3	4	5	
20Wp SHS	200	400	600	600	600	245
50Wp SHS	200	400	600	600	800	427
10kW Pico-hydro/diesel	8	12	16	20	24	10,567

The project incremental cost is derived by using the information from the table above and modifying it as discussed below. GEF would pay incremental costs in the range 75-50%. IDA would help with the remaining incremental costs for the first two years.

Small Consumers. These consumers will typically wish to acquire systems of 20Wp in size. The system carries a significant incremental cost at the moment because of the weakness of the market. It is expected that over the coming years, market growth will bring about a significant reduction in system cost and hence incremental cost. Reductions in system cost of the range of 10-20% can be expected over the lifetime of the project, which would bring them to the same order as those in other countries. It is thus proposed that a 'first cost grant' is used, payable to the concessionaire to absorb the incremental cost in the initial years. The first cost grant would follow a schedule of reducing payments:

20Wp System	Year 1 (\$)	Year 2 (\$)	Year 3 (\$)	Year 4 (\$)	Year 5 (\$)
First cost grant payable	184	184	123	123	123
Proportion of incremental cost (%)	75	75	50	50	50

The schedule outlined above anticipates costs being brought down to a level more comparable with those found in more mature markets.

Medium and Large Consumers. Medium consumers are expected to acquire systems of 50Wp. The consumers who acquire the 50Wp system will have either kerosene, gas and batteries or a gasoline generator as the alternative. As with the 20Wp systems, reductions in system cost of the range of 10-20% can be expected over the lifetime of the project, which would bring them to the same order as those in other countries. To account for the existence of a lower cost option in the 20Wp system and to avoid the subsidy benefiting those who obtain a larger system (and who will tend to be better off) it is proposed that the first cost grant cover 75% of the incremental costs in years 1, declining thereafter as shown in the table.

50Wp System	Year 1 (\$)	Year 2 (\$)	Year 3 (\$)	Year 4 (\$)	Year 5 (\$)
First cost grant payable	320	320	320	214	214
Proportion of incremental cost (%)	75	75	75	50	50

Large consumers will be decentralized providers who will provide energy services through a 10 kW mini-grid to an average of about 200 rural households (50Wc demand/household). The grant will cover 75% of the incremental cost in the first year, falling to 50% by the fifth year.

Technical Assistance and Start up Costs for BERD. Technical assistance to BERD to promote and evaluate of DRE proposals, monitoring and evaluation of DRE activities, dissemination/replication and staff training, training of PDESs staff and preparation of guidelines for the safe handling and disposal of batteries and waste engine oil, and other hazardous materials. TA is required over 2 years for about \$500,000. The TA components are as follows:

	<u>\$/year</u>
- Promote/evaluate DRE proposals	\$75,000
- Monitoring and Evaluation	\$50,000
- Dissemination and Staff training	\$40,000
- Training of PDESs	\$50,000
- Training and Environmental guidelines	\$35,000
Total	<u>\$250,000</u>

Total GEF grant is thus determined as follows:

Item	GEF grant
	(\$)
TA for BERD	500,000
20Wp SHS	366,765
50Wp SHS	682,818
Pico-hydro	517,771
Total	2,067,355

The GEF alternative to the baseline scenario is expanding new renewable technology, principally SHS and pico-hydro-generators associated wherever needed with low cost distribution grids and innovative tariff systems. Additional technical assistance (such as methodological and operational assistance, training and monitoring, independent evaluation, etc.), which would contribute to the removal of barriers resulting from inexperience with high penetration of such DE systems, is included in the GEF alternative.

Incremental Cost Calculation Matrix

	Baseline	GEF Alternative	Incremental Savings
Domestic Benefit	Lighting and small power needs provided by fossil fuels	Lighting and other services provided by renewable sources	
Global Environment Benefit 2000-2029 2000-2004	109,122 tons/CO2	7,858 tons/CO2	101,264tons/CO2 29,858 tons/CO2
Costs (US\$): SHS 20 Wp SHS 50 Wp Pico-hydro grid systems Market Development Activities	\$394 \$807 \$221,027	\$639 \$1,234 \$231,594	\$245 \$427 \$10,567

Economic Rate of Return: The project's ERR is 7.75%.

Process of Agreement

The incremental cost parameters described here have been derived by Bank staff in consultation with the Government of Guinea. The information has been gained from market studies and modeling developed in the course of project preparation.

Annex 5: Financial Summary
GUINEA: Decentralized Rural Electrification Project
Years Ending

STAP Review and Responses

Overall, STAP has fully endorsed the Project stating that it will not only bring rural energy services to an area where electrification is almost entirely absent (1 % rural service rate), but if properly implemented could build a new clean-energy infrastructure that could become self-sustaining. Furthermore, the potential to initiate in Guinea a rural energy sector dominated by decentralized energy service providers, as opposed to an unrealistic and cost-ineffective grid-extension program, makes this project doubly attractive.

Against the backdrop of this endorsement, the STAP has raised a number issues, which are presented below along with the Bank's response.

1. The PCD identifies uncertainty over the Government commitment to the project to be a significant risk. This can not be overstated, and every effort needs to be made to secure this commitment.

Response: In late 1999, The Power Sector Reform Workshop demonstrated the willingness and commitment of the Government to address the required reform issues head-on. There is no real uncertainty as the Government's responsibilities - for decentralized electrification - are simply to create the regulatory environment (a law was promulgated), to create the institutional environment (establish BERD and the Steering Committee which is now done), and to raise more bilateral financing when the decentralized electrification program shows progress. The commitment of the Government to decentralized electrification as part of its strategy to fight poverty is real. This is supported by the recently approved Country Assistance Strategy (CAS) Progress Report and the Structural Adjustment Credit (SAC IV). The Government has taken important steps to foster decentralized electrification by putting in place the institutional environment (establish BERD and the Steering Committee for decentralized electrification), and committed to raise more bilateral financing when the decentralized electrification program shows progress.

2. Primary concerns in the successful implementation of this project focus on the available project and Government of Guinea resources to support decentralized concessionaires and to insure that they provide rural energy services beyond the termination of the formal project.

Response: The concern is valid and we fully agree with it. The project is designed as a Learning and Innovation Loan specifically with the intent of identifying approaches that would eventually make rural energy services financial self-sustaining, and

measures that would be required to insure that decentralized concessionaires continue to provide such services. Key to project success and sustainability is the functioning of BERD. BERD acts as Project Implementation Unit on behalf of the Government, and it is supposed to become a self-financing unit as early on as possible. BERD's base costs are supported by the project; once the increasing workload requires contracting more staff, this should be fully paid for by the beneficiaries. BERD is fully autonomous, and interference by third parties (government entities included) should be limited as financing decisions to implement sub-projects are made on a commercial basis: future providers of energy services need to obtain loans from the bank that manages DEF. BERD initially will bring together potential partners (providers, beneficiaries, etc).

3. A potential source of problem for the combination of sustained growth, access to new services across socioeconomic classes, and profitability of the DE project is the exclusion of the new concessionaires from operating in the largest urban areas of the nation. A superior arrangement would be to permit concessionaire activity in these areas that are already served by the existing energy supply infrastructure.

Response: The arrangement of allowing new concessionaires to operate in areas that are already served by the existing energy supply infrastructure is indeed a superior arrangement and the law allows for it, provided of course that the area sought has not already been awarded. Actual awards would therefore depend on the demand for such concessions and their availability.

4. The reliance on a single, purely local, financial institution such as BICIGUI to support DE effort seems unrealistic.

Response: The comment is valid. However, as noted in the PCD, other avenues will also be explored including the prospects of involving NGOs. The suggestion to use the Solar Bank to become active in Guinea to develop the financing mechanisms should be kept in mind. Once the local bank has demonstrated that it is feasible to provide financing for DE activities and it is time to scale-up, the Solar Bank can play a useful role.

5. The PCD calls for the implementation of several pico-hydro projects to provide DE services. This is a logical resource to exploit, and pico-hydro technology has a good prospect for sustainable applications and commercialization in Guinea. The PCD, however, does not provide a sufficiently clear program to support commercial growth.

Response: The lessons learned from this LIL will serve as the basis for developing a longer-term program of support not only for sustainable applications and commercialization of pico-hydro but also for other RETs.

6. The Guinea DEP project will offset some greenhouse gas emissions, to be sure.

However, the greatest benefit of the project will through the provision of rural services to the initial households, and-ideally-through the growth of a rural renewable energy service market that his program may initiate.

Response: We agree. However, the market will only grow if the barriers are removed and implementation costs reduced, which is the rationale for GEF involvement.

7. By a conservative estimate based on the photovoltaics-related total project costs. $(\$1,000,000 / (80,000 \text{ tons, of CO}_2)) = \$12.5/\text{t cot}$. On a carbon only basis, $(44/12) * 125/\text{TC} = \$45.8/\text{TC}$. This value slightly high compared to other carbon-offset opportunities; however, it is also perfectly respectable *given the* range of additional important social benefits from the program.

Response: The comment is valid over the short term. Once the barriers are removed, it would not be unreasonable to assume that over the longer-term the number of households using SHS will increase by multiples of what is envisaged under the project, with its attendant consequences for reductions in GHG emission and cost-effectiveness of the intervention. Operational Program Number 6 subsumes such a longer term perspective. The Incremental Cost Analysis was revisited to take into account the sustainability and market transformation issues (See Annex 4 for revised Analysis). This resulted in a considerably more favorable cost of CO₂ abatement in the short term.

8. In many settings where new renewable energy technologies have been introduced into rural settings the overall consumption of the previous fuel (in this case dung, wood and charcoal) did not decrease at all.

Response: SHS will displace kerosene, candles and batteries not dung, wood and charcoal.

9. To set the context of the cost/month of rural energy services (primarily kerosene), it would be useful to include the per capital income to put this value in comparison.

Response: Agreed

	IMPLEMENTATION PERIOD						
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Total Financing Required							
Project Costs							
Investment Costs	1.3	3.5	5.1	5.2		0.0	0.0
Recurrent Costs	0.4	0.4	0.5	0.6	0.0	0.0	0.0
Total Project Costs	1.7	3.9	5.6	5.8	0.0	0.0	0.0
Total Financing	1.7	3.9	5.6	5.8	0.0	0.0	0.0
Financing							
IBRD/IDA	0.5	1.0	2.0	1.0	0.5	0.0	0.0
Government	0.2	0.2	0.3	0.4		0.0	0.0
Central	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Provincial	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Co-financiers						0.0	0.0
GEF		0.6	0.8	0.4	0.2	0.0	0.0
Other	1.0	2.1	2.5	3.3		0.0	0.0
Total Project Financing	1.7	3.9	5.6	5.1	0.7	0.0	0.0

Main assumptions:

Annex 6: Procurement and Disbursement Arrangements
GUINEA: Decentralized Rural Electrification Project

Procurement

General

1. A Public Procurement Reform Program was launched in Guinea in 1997. The purpose of the Program, supported by an IDF Grant, was to enable the Government of Guinea to reform its legal, regulatory and institutional framework related to public procurement operations. It was completed in 2000 with mixed results. While initial measures of procurement reform were undertaken by the authorities, procurement remains weak and is a major stumbling block in project implementation and disbursements. The main causes were identified as (i) inconsistent implementation of procurement laws, rules and regulations; (ii) cumbersome procurement processes and clearances; and (iii) weak procurement capacity in implementing agencies.

2. To address these issues, a Country Procurement Assessment Review (CPAR) is presently under way and an initial IDA mission was conducted in October 2001. The review process is scheduled to be completed by June 2002. The CPAR's major focus will be: (i) a comprehensive analysis of public sector procurement structure; (ii) a general assessment of the risks associated with the procurement process; (iii) an Action Plan to strengthen public and private procurement processes; (iv) an Action Plan for the training of procurement staff of project implementing agencies and government units.

Procurement methods (Table A)

Use of Bank Guidelines

Civil works and goods

3. Procurement will take place in accordance with the Bank's *Guidelines for procurement under IBRD Loans and IDA Credits* (January 1995, lastly revised in January 1999). For International Competitive Bidding (ICB), the Bank's Standard Bidding Documents are to be used as well as the Standard Pre qualification Document (where applicable) and the Standard Bid Evaluation Forms. If national bidding documents are used for National Competitive Bidding (NCB), these documents and Guinea's procurement laws and procedures are acceptable to the Bank and have been verified to assure economy, efficiency, transparency and fair participation. Such NCB procedures will ensure that (i) bids will be advertised in national newspapers with wide circulation; (ii) bid documents clearly explain the bid evaluation and award criteria; (iii) bidders are given adequate response time to prepare and submit bids (minimum 4 weeks); (iv) bids will be awarded to the lowest evaluated bidder and not arbitrarily; and (v) eligible bidders, including foreign bidders, will not be precluded from participating. Procurement carried out for community sub-projects would be carried out in accordance with paragraph 3.15 of the Guidelines (Community Participation in Procurement) and with the Bank's *Guidelines for Simplified Procurement and Disbursement for Community-Based Investments* (February 1998). These would be described in a specific chapter of the Project Implementation Manual to be prepared for the management of community sub-projects

4. Aggregate values for NCB or other non-ICB procurement methods for goods and works as specified in this Annex and the Development Credit Agreement, are limitative and cannot be exceeded without the prior no objection of the Bank. The Procurement Unit within the "Bureau d'Électrification Rurale Décentralisée" (BERD) will maintain a tracking system to monitor such procurement in order to alert the Bank in a timely manner when this may occur (the aggregate amounts are derived from the procurement plan which lists the estimated amounts of contracts for each procurement method).

Consultant services

5. (a) Procurement will take place in accordance with the Bank's Guidelines for the Selection and Employment of Consultants by World Bank Borrowers (January 1997, lastly revised in January 1999); (b) The Bank's Standard Request for Proposals will be used and Forms of Contracts as needed (lump-sum, time-based, and/or simplified contracts for short-term assignments and individual consultants) as well as the Sample Form of Evaluation Report for the Selection of Consultants.

Advertising

6. (a) A General Procurement Notice (GPN) will be prepared and issued upon Board approval in

the United Nations Development Business listing all goods and works contracts procured under ICB and large contracts for consulting services estimated to cost US \$100,000 equivalent or more to obtain expressions of interest and to draw up a pool of solid candidate firms from which to compile the short list; (b) sufficient time (minimum of 30 days) before preparing the short list; and (c) the GPN will be updated annually for those contracts still to be let.

7. (a) The related pre qualification or bidding documents, as applicable, will not be released - or that the short list for consultant services will not be prepared - before eight weeks after the GPN has been published; (b) the GPN will be updated annually for those contracts still outstanding; (c) a GPN will also be issued in the national press or official gazette for contracts to be let under NCB; and (d) Specific Procurement Notices (SPNs) for goods and works will be advertised in the national press of wide selection, and internationally for large contracts (ICB); (e) sufficient time will be allowed to obtain the bid documents.

Procurement Capacity

8. The "Bureau d'Électrification Rurale Décentralisée" (BERD), was formally established by official decree in June 2001 and will be responsible for the supervision, administration, and monitoring of procurement under the project. The Director and a qualified accountant have already been appointed and a qualified and experienced procurement specialist will be appointed as soon as possible but would be a condition of Credit Effectiveness. Although the BERD is a new entity, it can rely on accumulated experience on the part of the Government in implementing IDA financed projects and substantial knowledge in the Bank's procurement procedures. The performance of BERD will be closely monitored during IDA supervision missions and a least a post review of 1 out of 10 contracts will be carried out to: (a) verify that the procurement and contracting procedures and processes followed for the projects were in accordance with the Development Credit Agreement (DCA); (b) review BERD capacity in handling procurement efficiently; and (c) identify improvements in the procurement process in the light of any unidentified deficiencies. All thresholds stated in this Annex will be reviewed by the Borrower and IDA on an annual basis and amendments to the DCA may be agreed upon based on performance.

Manual of Procedures and Procurement Plan

9. The preparation of a Manual of Procedures was discussed during appraisal, to be reviewed at Negotiations and approved prior to Credit Effectiveness. Apart from incorporating relevant Bank/IDA procedures for procurement of goods and works and the selection of consultants it will also include simplified procedures and sample contracts for decentralized activities related to the electrification program at the community/village level. The Manual will also include a detailed Procurement Plan (PP) of goods and services for the anticipated number of years to complete the project. Particular emphasis should be placed on the first year of implementation listing target time periods for various procurement phases showing planned versus actual completion dates. The PP, a draft of which has already been prepared, will be updated at least annually and will serve as an important monitoring tool for supervision of the Project. The Project Implementation Manual will include a specific chapter for the management of community sub-projects. The

chapter will be based on paragraph 3.15 of the Guidelines (Community Participation in Procurement) and the Bank's *Guidelines for Simplified Procurement and Disbursement for Community-Based Investments* (February 1998). The PIM will be finalized as a condition of effectiveness.

Civil Works: US\$1.28 million

10. The total cost of civil works is estimated at US\$1.28 million, of which IDA will finance US\$0.28 million, the rest is financed by the private providers. It is estimated that US\$0.4 million will be procured through NCB procedures up to an aggregate amount of US\$0.4 million. All other civil works will be small civil works, estimated to cost US\$ 50,000 or less per contract, up to an aggregate of US\$ 880,000. These small works may be procured under lump-sum, fixed-price contracts awarded on the basis of quotations obtained from three qualified domestic contractors invited in writing to bid. The invitation shall include a detailed description of the works, including basic specifications, the required completion date, a basic form of agreement acceptable to IDA, and relevant drawings where applicable. The awards will be made to the contractors who offer the lowest price quotation for the required work, provided they demonstrate they have the experience and resources to complete the contract successfully.

Goods and Equipment: US\$11.80 million

11. The total cost for goods and equipment is estimated at US\$11.80 million, of which IDA and GEF will finance US\$4.22 million. Goods (consisting of electricity generating and its ancillary equipment) will be grouped, where feasible, into packages of US\$ 100,000 or more and would be procured through ICB to obtain more favorable prices. Goods estimated to cost US\$ 50,000 or more but less than US\$ 100,000 per contract, up to an aggregate of US\$1.5 million, may be procured through NCB procedures. For goods and equipment estimated to cost US\$ 5,000 but less than US\$ 50,000 per contract and up to an aggregate of US\$1.6 million may be procured through prudent national shopping for items available locally, or through international shopping for those goods not available on the national market, on the basis of quotations obtained from at least three qualified suppliers or through IAPSO (Inter-Agency Procurement Services Offices of the UNDP). Spare parts and minor off-the-shelf items of proprietary nature estimated to cost less than US\$ 5,000 up to an aggregate of US\$ 100,000, may be procured directly from manufacturers and authorized local distributors.

Consultants' Services: US\$3.92 million

12. The total cost for Consultants' services is estimated at US\$3.92 million, of which IDA and GEF will finance US\$2.50 million. The services would be for: (i) studies, preparation of business plans, data collection, accounting systems, monitoring, audit and impact analysis; and (ii) long term technical assistance, short term consultancies on specific technical matters and training. Selection of consultants will be done through competition among qualified short-listed firms in which the selection will be based on **Quality and Cost-Based Selection (QCBS)** by evaluating the quality of the proposal before comparing the cost of the services to be provided. For Audits of standard nature, the **Least Cost Selection (LCS)** will be the most appropriate method, i.e., the

firm with the lowest price will be selected, provided its technical proposal received more than the minimum mark required. Contracts for consultant services carried out by firms and estimated at less than US\$ 50,000 per contract up to an aggregate of US\$0.8 million would be based on **Consultants' Qualifications (CQ)** taking into account the consultants' experience and competence relevant to the assignment. Services for specific interventions (such as, but not limited to the preparation of business plans, monitoring and evaluation) which can be delivered by **Individual Consultants (IC)** will be selected through comparison of qualifications against job description requirements among those expressing interest in the assignment or approached directly.

13. To ensure that priority is given to the identification of suitable and qualified national consultants, short-lists for contracts under US\$ 50,000 equivalent may be comprised entirely of national consultants provided that a sufficient number of qualified individuals or firms (at least three) are available at competitive costs. However, if foreign firms have expressed interest, they will not be excluded from consideration. The Standard request for Proposal (RFP) as developed by the Bank will be used for requesting proposals, and for selection and appointment of consulting firms. The Government will be briefed during negotiations about the new features of the Consultants Guidelines, in particular with regard to advertisement, public opening of financial proposals, and evaluation criteria

14. Grants to community-based sub-projects. The project will finance community-based sub-projects for a total estimated at US\$1.5 million equivalent) in the form of grants. Financing will depend on applications received from communities and the types of activities to be financed and their procurement details will depend on the needs identified by the communities. Therefore, it not possible to determine the exact mix of goods, small works, and services to be procured under these activities due to their demand-driven nature.. Procurement of items for the implementation of sub-projects would be carried out in accordance with simplified procurement procedures referred to in Section 3.15 of the Guidelines and in accordance with the Project Implementation Manual. The manual will contain a special chapter describing the procedures and tools in accordance with those found in the Bank's *Guidelines for Simplified Procurement and Disbursement for Community-Based Investments* (February 1998). The BERD will be responsible for ensuring compliance with these guidelines. Ex-post reviews of random sub-projects will be conducted periodically by the Bank and independent technical audits.

Table A: Project Costs by Procurement Arrangements
(US\$ million equivalent)

Expenditure Category	Procurement Method ³				Total Cost
	ICB	NCB	Other ³	N.B.F.	
1. Works	0.00 (0.00)	0.40 (0.28)	0.88 (0.00)	0.00 (0.00)	1.28 (0.28)
2. Goods	0.40 (0.40)	3.00 (2.50)	1.60 (1.32)	6.80 (0.00)	11.80 (4.22)
3. Services	0.00 (0.00)	0.00 (0.00)	3.00 (2.50)	0.92 (0.00)	3.92 (2.50)
	0.00 (0.00)	0.00 (0.00)	()	()	0.00 (0.00)
Total	0.40 (0.40)	3.40 (2.78)	5.48 (3.82)	7.72 (0.00)	17.00 (7.00)

^{1/} Figures in parenthesis are the amounts to be financed by the Bank Credit/Grant/Other (Specify). All costs include contingencies.

^{2/} Includes civil works and goods to be procured through national shopping, consulting services, services of contracted staff of the project management office, training, technical assistance services, and incremental operating costs related to (i) managing the project, and (ii) re-lending project funds to local government units.

^{3/} Includes both IDA (\$5million) and GEF funds (\$2million)

Prior review thresholds (Table B)

Prior review thresholds (Table B)

14. Requirements for IDA prior review take into account the lack of experience of the BERD, since it is a new institution created under the project.

For Civil works (totaling US\$1.28 million equivalent). Civil works contracts estimated to cost US \$100,000 equivalent or more will be subject to IDA prior review.

With respect to Goods (totaling US\$10.8 million equivalent) all ICB contracts valued at US \$100,000 equivalent or more will be subject to prior review as well as the first five contracts under NCB valued at more than US \$50,000 but less than US \$100,000 equivalent. For National shopping procedures for Goods valued above US \$5,000 but less than US \$50,000 equivalent, only the first two contracts will require prior review by IDA.

For Consultant Services (totaling US\$2.92 million equivalent), prior IDA review would be required for all Terms of Reference, irrespective of contract value. Contracts with Firms, estimated each above US \$100,000 equivalent, the technical evaluation would be submitted to IDA for its review prior to the opening of the financial proposals. Contracts with Firms estimated each below US \$100,000 but above US \$50,000 equivalent, although the two step evaluation process remains, IDA would review the results of the technical evaluation and financial proposals together. For Audits, Least Cost Selection (LCS) procedures apply whereby after the technical proposal has been evaluated, the technical evaluation would be submitted to IDA for its review prior to the opening of the financial proposals. For Contracts with Individual Consultants: the qualifications, experience, terms of reference and terms of employment shall be furnished to IDA for its review and approval prior to contract signature. Contracts for Individual Consultants estimated to cost US \$10,000 equivalent or more will be subject to prior review. For contracts below US \$10,000 equivalent, only the first five contracts will need to be reviewed.

Post Review

Monitoring and evaluation of procurement performance at all levels (national and community) would be carried out for procurement under the prior review thresholds during IDA supervision missions and through annual ex-post procurement audits. At a minimum, 1 out of 10 contracts for goods managed by BERD will be subject to post review. Annual independent technical audits (ex-post procurement audits) would: (a) verify that the procurement and contracting procedures and processes followed for the projects were in accordance with the Development Credit Agreement (DCA); (b) verify technical compliance, physical completion and price competitiveness of each contract in the selected representative sample; (c) review and comment on contract administration and management issues as dealt with by BERD; (d) review capacity of BERD in handling procurement efficiently; and (e) identify improvements in the procurement process in light of any identified deficiencies. All thresholds stated in this section will be reviewed by the Borrower and IDA on an annual basis. Amendments may be agreed upon based on performance and actual values of procurement implemented. Amendments to the Development Credit

Agreement may be proposed accordingly.

Table B: Thresholds for Procurement Methods and Prior Review ¹

Expenditure Category	Contract Value Threshold (US\$ thousands)	Procurement Method	Contracts Subject to Prior Review US\$ million
1. Works	50 and above below 50	NCB NS	Prior Review of all: 0.8 Post Review
2. Goods	100 and above above 50 and below 100 above 5 and below 50	ICB NCB NS	Prior Review of all: 1.5 Prior Review first 5 contracts: 0.2 Post Review of rest Post review
3. Services			All TORs or sole source contracts are subject to IDA prior review
3a. Individuals	above 10,000 below 10,000	Individual Consultants Individual Consultants	Prior Review of all: 0.2 Post review
3.b. Firms	Above 50,000 below 50,000 Audits	QCBS CQ LCS	Prior Review of All: 2.2 Post review Prior Review of All: 0.3
4. Miscellaneous			
5. Miscellaneous			
6. Miscellaneous			

Total value of contracts subject to prior review: US\$5,000,000

Overall Procurement Risk Assessment

High

Frequency of procurement supervision missions proposed: One every 6 months (includes special procurement supervision for post-review/audits) on an annual basis.

¹Thresholds generally differ by country and project. Consult OD 11.04 "Review of Procurement Documentation" and contact the Regional Procurement Adviser for guidance.

Disbursement

Allocation of credit/grant/other (specify) proceeds (Table C)

The closing date of the proposed credit will be December 31, 2006. The proposed IDA credit would be disbursed against the categories shown in Table C.

Disbursements will be made in accordance with procedures and policies outlined in the Bank's *Disbursement Handbook*. A special account for BERD covering four months of eligible expenditures will be established at a commercial bank acceptable to IDA. Half of the initial deposit will be made available to the special account upon credit effectiveness, and the remaining balance will be made available as needed.

Replenishments of the special account should be made every month or when needed and must be fully documented, except for operating costs and training expenditures and for contracts valued at less than (i) US \$50,000 for consultants (firms); and (iv) US \$30,000 for individual consultants. BERD will maintain all supporting documents in its office for review by visiting supervision missions and external auditors.

IDA and GEF Financing (US\$ million)

	IDA	GEF	Total
Sub loans	1.5		1.5
Grants	1.0	1.5	2.5
Goods	0.25		0.25
Consultancy Services	1.2	0.25	1.45
Operating costs	0.4		0.4
PPF advance	0.15		0.15
Non allocated	0.5	0.25	0.75
Total	5	2	7

Table C: Allocation of Credit/Grant/Other (Specify) Proceeds

Expenditure Category	Amount in US\$million	Financing Percentage
Subloans and Grants	4.00	100% of amounts disbursed
Goods	0.25	100% of foreign 80% of local
Consultancy Services, audit, and training	1.45	80%
Operating costs	0.40	80%
Refunding of Project Preparation Advance	0.15	100%
Unallocated	0.75	
Total Project Costs	7.00	
Total	7.00	

Use of statements of expenditures (SOEs):

The project is expected to be completed over a four year period according to the categories shown in Table C above, and the Credit closing date would be six months after the 2006 year to allow payment of last invoices for contracts completed before the completion time. Government counterpart funds needed for each fiscal year to cover the share of recurrent costs not financed by IDA will be deposited by the Government in a Project Account on an annual basis.

Use of Statement of Expenditures (SOEs). Disbursements for all expenditures would be made against full documentation, except for items of expenditures for: (a) contracts for consulting firms in an amount inferior to \$100,000 equivalent, (b) contracts for individual consultants in an amount inferior to \$50,000 equivalent, (c) contracts for works and goods, in an amount inferior to \$100,000, and (d) grants for sub-projects and operating costs, which would be claimed on the basis of Statement of Expenditures (SOEs). All supporting documentation for SOEs would be retained at a suitable location at BERD, and readily accessible for review by periodic IDA supervision missions and external auditors.

Special account:

Special Account. To facilitate project implementation and reduce the volume of withdrawal applications, the BERD would open a Special Accounts in US dollars in a commercial bank on terms and conditions acceptable to IDA. The Special Account would finance all project expenditures. The authorized allocation would be 500,000 US dollars and would cover about six months of eligible expenditures. Upon credit effectiveness, IDA would deposit the amount of 250,000 US dollars into Special Account the Special Account representing fifty percent of the authorized allocation.

The remaining balance would be made available when the aggregate amount of withdrawals from the credit account plus the total amount of all outstanding special commitments entered into by the Association shall be equal to or exceed the equivalent of 2000,000 US dollars for the Special

Account. It would be used for all payments inferior to twenty percent of the authorized allocation and replenishment applications would be submitted monthly. Further deposits by IDA into the Special Accounts would be made against withdrawal applications supported by appropriate documents.

Annex 7: Project Processing Schedule
GUINEA: Decentralized Rural Electrification Project

Project Schedule	Planned	Actual
Time taken to prepare the project (months)		30
First Bank mission (identification)		01/10/1997
Appraisal mission departure	02/01/2000	05/07/2000
Negotiations	02/28/2002	03/18/2002
Planned Date of Effectiveness	08/31/2002	

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Preparation assistance:

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Bank staff who worked on the project included:

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Bhanoumatee Ayoung	Sr. Procurement Specialist
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Korotoumou Ouattara	Financial Economist

Annex 8: Documents in the Project File*
GUINEA: Decentralized Rural Electrification Project

A. Project Implementation Plan

Was discussed during appraisal and will be a condition for negotiations.

B. Bank Staff Assessments

Guinea, Household Energy Strategy, ESMAP, 1994

C. Other

Définition et mise en oeuvre d'un mécanisme financier durable, Horus, février 2000;
Decentralized Rural Electrification - institutional and operational Scheme, Marge, February 1999;
Electrification Rurale Décentralisée en Guinée, Avancement du programme MNRE - ESMAP, octobre 1998;
Enquêtes sur la demande solvable d'électrification rurale hors réseau, en Basse Guinée et en Moyenne Guinée, S.N.A.P.E. janvier 1998;
Etude d'électrification rurale par centrale hydraulique et mini-réseau de la sous-préfecture de Konkouré, APAVE, novembre 1997;
Pico Hydro & Diesel Electrification of Konkouré-Médina, Harvey Associates, November 1997;
Rapport synthèse programme pico thermique (GECO), septembre 1997;
Atelier électrification rurale décentralisée - document de travail, Direction Nationale de l'Energie, octobre 1997.

*Including electronic files

Annex 9: Statement of Loans and Credits
GUINEA: Decentralized Rural Electrification Project

Project ID	FY	Purpose	Original Amount in US\$ Millions				Cancel.	Undisb.	Difference between expected and actual disbursements*	
			IBRD	IDA	SF	GEF			Orig	Frm Rev'd
P001066	1983	AGR EXPORT PROMOTION	0.00	20.80			0.00	9.35	8.81	2.38
P001081	1996	AGRIC SERVICES	0.00	35.00			0.00	5.91	1.78	0.00
P049718	2000	CAPACITY BUILDING SD	0.00	19.00			0.00	18.68	0.00	0.00
P001087	1985	EQUITY AND SCHOOL IM	0.00	42.50			0.00	16.88	14.64	0.00
P001070	1984	HEALTH/NUT.SCTR.	0.00	24.60			0.00	8.64	5.23	5.23
P001090	1998	HIGHER EDUCATION MAN	0.00	6.60			0.00	3.04	3.29	2.85
P050731	1998	MICROFINANCE	0.00	5.00			0.00	5.11	1.14	0.00
P001077	1996	MIN SECT INV PROMOT	0.00	12.20			0.00	1.70	1.33	0.00
P041568	1999	POP & REPROD HEALTH	0.00	11.30			0.00	9.63	-0.52	0.00
P057188	1999	PRE-SRV TEACHER EDUC	0.00	4.10			0.00	2.43	1.00	0.00
P001075	1987	THIRD WATER SUPPLY	0.00	26.00			0.00	21.04	6.56	0.00
P001074	1989	URBAN I/II	0.00	18.00			0.00	18.90	1.21	0.00
P050732	1999	VILLAGE COMMUNITY SUPPORT PROGRAM	0.00	22.00			0.00	20.67	-0.45	0.00
Total:			0.00	246.10			0.00	139.84	44.00	10.44

GUINEA
STATEMENT OF IFC's
Held and Disbursed Portfolio

In Millions US Dollars

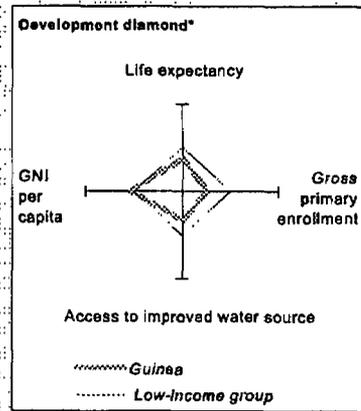
FY Approval	Company	Committed				Disbursed			
		IFC				IFC			
		Loan	Equity	Quasi	Partic	Loan	Equity	Quasi	Partic
1988	Aurifere	0.00	0.00	4.59	0.00	0.00	0.00	4.59	0.00
1994	Ciments Guinee	0.30	0.00	0.00	0.00	0.30	0.00	0.00	0.00
1998	SEF Agro	0.13	0.00	0.00	0.00	0.13	0.00	0.00	0.00
1999	SEF Alex	1.17	0.00	0.00	0.00	1.17	0.00	0.00	0.00
1993/98	SGHI	0.00	0.00	0.44	0.00	0.00	0.00	0.44	0.00
	Total Portfolio:	1.60	0.00	5.03	0.00	1.60	0.00	5.03	0.00

FY Approval	Company	Approvals Pending Commitment			
		Loan	Equity	Quasi	Partic
	Total Pending Commitment:	0.00	0.00	0.00	0.00

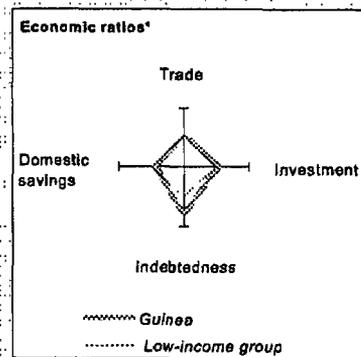
Annex 10: Country at a Glance

GUINEA: Decentralized Rural Electrification Project

POVERTY and SOCIAL	Guinea	Sub-Saharan Africa	Low-Income
2000			
Population, mid-year (millions)	7.4	659	2,489
GNI per capita (Atlas method, US\$)	450	480	420
GNI (Atlas method, US\$ billions)	3.4	313	1,030
Average annual growth, 1994-00			
Population (%)	2.4	2.6	1.9
Labor force (%)		2.6	2.4
Most recent estimate (latest year available, 1994-00)			
Poverty (% of population below national poverty line)	48		
Urban population (% of total population)	30	34	32
Life expectancy at birth (years)	44	47	59
Infant mortality (per 1,000 live births)	98	92	77
Child malnutrition (% of children under 5)			
Access to an improved water source (% of population)	49	55	76
Illiteracy (% of population age 15+)	76	38	38
Gross primary enrollment (% of school-age population)	51	78	98
Male	65	85	102
Female	37	71	86

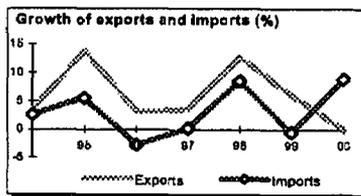
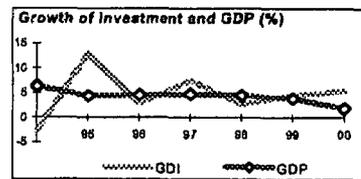


KEY ECONOMIC RATIOS and LONG-TERM TRENDS	1980	1990	1999	2000
GDP (US\$ billions)	2.8	3.5	3.1	3.1
Gross domestic investment/GDP	17.5	22.2	22.1	22.1
Exports of goods and services/GDP	30.9	21.4	25.9	25.9
Gross domestic savings/GDP	17.7	17.5	18.6	18.6
Gross national savings/GDP	10.4	14.9	15.7	15.7
Current account balance/GDP	-9.4	-7.2	-6.5	-6.5
Interest payments/GDP	1.9	1.7	1.9	1.9
Total debt/GDP	87.9	99.4	108.6	108.6
Total debt service/exports	19.8	20.3	16.7	16.4
Present value of debt/GDP			68.2	76.1
Present value of debt/exports			315.7	293.2
	1980-90	1990-00	1999	2000
(average annual growth)				
GDP	-4.3	3.9	1.8	5.3
GDP per capita	-1.5	1.5	-0.8	2.8
Exports of goods and services	4.8	6.0	0.0	5.2



STRUCTURE of the ECONOMY

(% of GDP)	1980	1990	1999	2000
Agriculture	..	23.8	24.3	23.7
Industry	..	33.3	37.9	38.6
Manufacturing	..	4.6	4.2	4.1
Services	..	42.9	37.8	39.7
Private consumption	..	73.4	76.5	75.4
General government consumption	..	8.9	6.0	5.9
Imports of goods and services	..	30.6	26.1	29.4
	1980-90	1990-00	1999	2000
(average annual growth)				
Agriculture	..	4.3	5.5	-2.8
Industry	..	4.7	5.3	4.3
Manufacturing	..	4.1	6.5	7.0
Services	..	3.6	2.9	3.4
Private consumption	..	3.5	1.7	3.8
General government consumption	..	4.7	3.3	3.8
Gross domestic investment	..	2.8	4.5	5.8
Imports of goods and services	..	1.2	-0.5	9.0

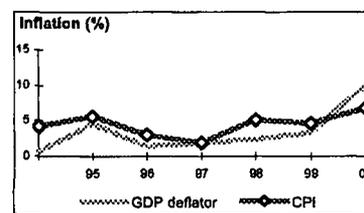


Note: 2000 data are preliminary estimates.

* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

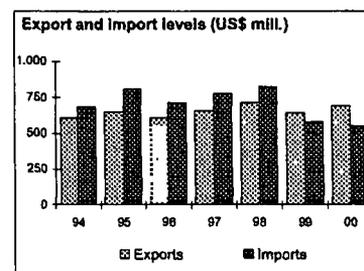
PRICES and GOVERNMENT FINANCE

	1980	1990	1999	2000
Domestic prices				
(% change)				
Consumer prices	..	23.3	4.6	6.8
Implicit GDP deflator	..	23.9	3.3	10.1
Government finance				
(% of GDP, includes current grants)				
Current revenue	..	15.8	10.9	11.1
Current budget balance	..	3.4	1.8	1.7
Overall surplus/deficit	-5.4	-5.6



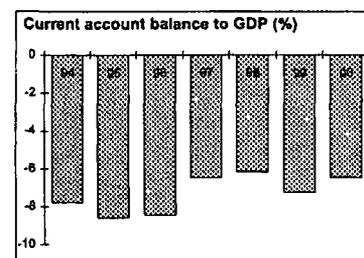
TRADE

	1980	1990	1999	2000
(US\$ millions)				
Total exports (fob)	..	817	646	685
Other metals	..	447	295	299
Aluminum	..	166	86	103
Manufactures
Total imports (cif)	..	723	582	555
Food	..	12	82	87
Fuel and energy	..	65	93	89
Capital goods	..	98	106	120
Export price index (1995=100)	..	140	94	97
Import price index (1995=100)	..	92	88	96
Terms of trade (1995=100)	..	153	107	101



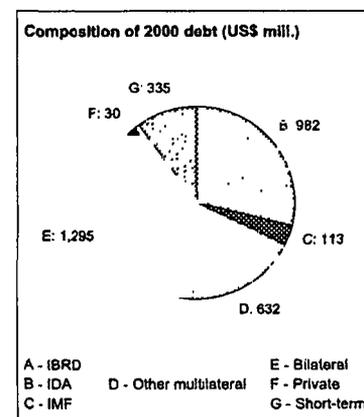
BALANCE of PAYMENTS

	1980	1990	1999	2000
(US\$ millions)				
Exports of goods and services	553	829	759	808
Imports of goods and services	481	891	924	917
Resource balance	72	-62	-165	-109
Net income	-95	-149	-84	-82
Net current transfers	-8	-53	-8	-10
Current account balance	-32	-264	-257	-201
Financing items (net)	57	315	215	158
Changes in net reserves	-25	-51	42	44
Memo:				
Reserves including gold (US\$ millions)	0	116	273	212
Conversion rate (DEC, local/US\$)	19.0	660.2	1,343.6	1,709.6



EXTERNAL DEBT and RESOURCE FLOWS

	1980	1990	1999	2000
(US\$ millions)				
Total debt outstanding and disbursed	1,133	2,476	3,521	3,387
IBRD	55	28	0	0
IDA	32	392	1,014	982
Total debt service	109	169	128	132
IBRD	9	14	0	0
IDA	0	3	18	18
Composition of net resource flows				
Official grants	25	95	109	112
Official creditors	1	119	30	2
Private creditors	46	-19	-1	0
Foreign direct investment	34	18	34	-33
Portfolio equity	0	0
World Bank program				
Commitments	17	174	61	0
Disbursements	10	52	29	29
Principal repayments	3	13	10	11
Net flows	7	39	19	18
Interest payments	6	5	8	7
Net transfers	1	35	11	11





IMAGING

Report No.: 24040 GUI
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