



PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project
THE GEF TRUST FUND

Submission date: 1 October, 2008
Re-submission Date: 23 April, 2009

PART I: PROJECT IDENTIFICATION

GEF PROJECT ID¹: PROJECT DURATION: 48 months
GEF AGENCY PROJECT ID: 4122
COUNTRY(IES): Nigeria
PROJECT TITLE: Promoting Energy Efficiency in Residential and Public Sector in Nigeria
GEF AGENCY(IES): UNDP, (select), (select)
OTHER EXECUTING PARTNER(S): National Energy Commission of Nigeria,
GEF FOCAL AREA (S)²: Climate Change
GEF-4 STRATEGIC PROGRAM(S): CC-SP1 Promoting Energy Efficiency in Residential and Commercial Buildings
NAME OF PARENT PROGRAM/UMBRELLA PROJECT (if applicable): GEF Energy programme for West Africa

| INDICATIVE CALENDAR* | |
|----------------------------------|------------------------------|
| Milestones | Expected Dates mm/dd/yyyy |
| Work Program (for FSP) | 06/24/2009 |
| CEO Endorsement/Approval | 08/01/2010 |
| Agency Approval Date | 09/01/2010 |
| Implementation Start | 10/01/2010 |
| Mid-term Evaluation (if planned) | 12/31/2012 |
| Project Closing Date | 12/31/2014 |

* See guidelines for definition of milestones.

A. PROJECT FRAMEWORK

Project Objective: To improve the energy efficiency of a series of end-use equipment from the residential and public sector in Nigeria(refrigeration appliances, air conditioners, lighting, electric motors and fans...) through the introduction of appropriate energy efficiency policies and measures, such as Standards and Labels (S&L) and demand-side management programmes. The project will strengthen the regulatory and institutional framework, develop monitoring and enforcement mechanisms, provide training to appliance and equipment professionals, and launch a public outreach campaign.

| Project Components | Indicate whether Investment, TA, or STA ^b | Expected Outcomes | Expected Outputs | Indicative GEF Financing ^a | | Indicative Co-Financing ^a | | Total (\$) c = a + b |
|--|--|--|--|---------------------------------------|-----|--------------------------------------|-----|----------------------|
| | | | | (\$) ^a | % | (\$) ^b | % | |
| 1. Capacities enhancement of all relevant stakeholders at national level regarding the concept, nature and potential of energy efficiency in the residential and public sector | TA | Assessment of potential greenhouse gas reduction through more energy efficient end-use in the residential and public sector An enabling regulatory and institutional framework for end-use energy efficiency codes, standard labels & certification is elaborated | 1.1 Validation of the energy &GHG savings potential for each main end-uses in the residential and public sector. 1.2 Monitoring and data collection system for end-use sales, energy demand and energy consumption is formalized and implemented. 1.3 Enhanced awareness of the political and policy decision makers' on end-use energy efficiency options and potentials for GHG reductions | 600,000 | 38% | 1,000,000 | 63% | 1,600,000 |

¹ Project ID number will be assigned by GEFSEC.

² Select only those focal areas from which GEF financing is requested.

| | | | | | | | | |
|--|----|---|--|-----------|-----|-----------|-----|-----------|
| | | | 1.4. The required new regulations drafted and ready for formal Government approval. | | | | | |
| 2. Development of new energy efficiency legal requirements for a series of end-use equipment in Nigeria. | TA | <p>Introduction of testing, certification labeling and enforcement mechanism to promote energy efficient end-uses at national level.</p> <p>Testing facilities are reinforced and operational</p> <p>National testing, certification, labeling and enforcement mechanisms adopted</p> | <p>2.1 National testing and certification procedures to promote energy efficiency are defined</p> <p>2.2 Pilot program launched to test and finalize appropriate energy efficiency schemes such as energy labels</p> <p>2.3 National labeling content and format is designed, tested, validated and adopted</p> <p>2.4 A relevant multiyear timetable is set to assure a coherent implementation.</p> | 1,000,000 | 36% | 1,800,000 | 64% | 2,800,000 |
| 3. Training of professional stakeholders and public outreach activities & Enforcement of the new energy efficiency legislation | TA | <p>Training provided to appliance professionals, and national outreach campaign to educate consumer and business buyers</p> <p>Verification & enforcement plan for retailers developed, tested, and implemented.</p> | <p>3.1 The Energy Efficiency requirement (thought Standards, Codes, Labels or a combination of them) are duly enforced, deeply transforming the end-use market</p> <p>3.2 The new regulations are understood and adopted by local manufacturers, importers, appliances distributors and the retail chain.</p> <p>3.3 Energy efficiency becomes priority in the purchase of any equipment.</p> <p>3.4 A thorough monitoring of the impact of the new energy efficiency requirement is</p> | 450,000 | 39% | 700,000 | 41% | 1,150,000 |

| | | | | | | | | |
|--|----|---|--|------------------------------|-----------------------|------------------------------|-----------------------|------------------|
| | | | performed. Regular update of the legislation in order to tighten energy efficiency is introduced. | | | | | |
| 4. Transform the lighting market : promotion of energy savings lamps | TA | Energy saving lighting products meet the new quality, environmental and energy performance standards Increased information to consumers about the benefits of energy-efficient lighting products | 4.1 A large scale pilot Campaign for Energy Efficiency Lamps completed A minimum of million CFLs disseminated in household, commercial and public services in partnership with Government of Cuba. 4.2 Financial incentives provided to pro-active local importers and traders to sale EEL products 4.3 Provision for recycling compact fluorescent lamps are recycled for the elimination of mercury according to international best practices | 400,000 | 28% | 1,000,000 | 72% | 1,400,000 |
| 5. Project management | | | | 227,273 | 31% | 500,000 | 79% | 727,273 |
| Total project costs | | | | A 2,677,273 | 35 % | B 5,000,000 | 65 % | 7,677,273 |

^a List the \$ by project components. The percentage is the share of GEF and Co-financing respectively of the total amount for the component.

^b TA = Technical Assistance; STA = Scientific & Technical Analysis.

B. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE and by NAME (in parenthesis) if available, (\$)

| Sources of Co-financing | Type of Co-financing | Project |
|---------------------------------|----------------------|--------------------|
| Project Government Contribution | Grant | 2,200,000 |
| Project Government Contribution | In-Kind | 2,000,000 |
| GEF Agency UNDP Nigeria | | 300,000 |
| Bilateral Aid Agency(ies) | Parallel | 500,000 |
| Total Co-financing | | B 5,000,000 |

C. INDICATIVE FINANCING PLAN SUMMARY FOR THE PROJECT (\$)

| | Previous Project Preparation Amount (a) ³ | Project (b) | Total c = a + b | Agency Fee |
|---------------|--|-------------|--------------------|------------|
| GEF financing | 50,000 | A 2,677,727 | 2,727,727 | 272,772 |
| Co-financing | 25,000 | B 5,000,000 | 5,025,000 | |

³ Include project preparation funds that were previously approved but exclude PPGs that are awaiting for approval.

| | | | | |
|--------------|--------|-----------|-----------|---------|
| Total | 75,000 | 7,677,727 | 7,752,727 | 272,772 |
|--------------|--------|-----------|-----------|---------|

D. GEF RESOURCES REQUESTED BY AGENCY (IES), FOCAL AREA(S) AND COUNTRY(IES)¹

| GEF Agency | Focal Area | Country Name/ Global | (in \$) | | |
|----------------------------|------------|-------------------------|-------------|-----------------------------|-------------|
| | | | Project (a) | Agency Fee (b) ² | Total c=a+b |
| (select) | (select) | | | | |
| (select) | (select) | | | | |
| Total GEF Resources | | | | | |

¹ No need to provide information for this table if it is a single focal area, single country and single GEF Agency project.

² Relates to the project and any previous project preparation funding that have been provided and for which no Agency fee has been requested from Trustee.

PART II: PROJECT JUSTIFICATION

A. STATE THE ISSUE, HOW THE PROJECT SEEKS TO ADDRESS IT, AND THE EXPECTED GLOBAL ENVIRONMENTAL BENEFITS TO BE DELIVERED:

In Nigeria, power production shortfalls and the poor quality of the electricity supply force the majority of businesses and households to rely on diesel generators as a primary or back-up source of electricity. The PHCN -Power Holding Company of Nigerian-, like numerous utility companies in Africa, is facing difficulties to keep up with electricity demand. Its effective electricity production is currently below 3,000MW and expected to reach 10,000 MW by 2012, against an overall current demand estimated to be much higher 10,000MW. While PHCN expects to augment its productive capacity by 1,500 MW per year, this increase is expected to barely keep up with the growth in demand from households and businesses.

Within this context, the promotion of large scale, concrete, national energy efficiency programme is a critical demand-side initiative to help reduce the energy consumption of a series of major end-uses, in particular air-conditioners, refrigerators and lighting. With Nigeria accounting for 25% of the population of sub-Saharan Africa, the proposed energy efficiency (EE) legislative package will have a significant impact on addressing the inevitable growth of electricity consumption in the region while contributing to greenhouse gas reduction.

The government is aware of the problem. It has taken preliminary steps to improve the quality and EE of appliances by banning the importation of used appliances, which currently account for an estimated two-thirds of total sales. In 2005, the GEF provided a PDF A grant (\$50 000) to allow for the development of Medium Size project targeting the introduction of an energy label on a selection of domestic appliances. The project failed to be approved because the project only proposed a voluntary labeling scheme to transform the appliances market. The absence of clear energy efficiency requirement was considered as a lack commitment. The project was dropped.

As Nigerian demand for appliances and end-use equipment continues to grow under the combined cumulative effect of urban population growth and economic activity, the government believes that the proposed energy efficiency policy framework is particularly timely to the extent that it will set in motion a local process of collaboration among importers and local manufacturers (primarily assembly plants of imported components) of end-use equipment by creating the appropriate market incentives to improve the energy efficiency of the selected appliances.

Many countries have introduced energy efficiency programs. Among the different tools available, labeling programs⁴ and minimum energy performance standards (MEPS)⁵ have proven to be highly effective approaches when targeting household demand. Many barriers, however, prevent the implementation of labeling and minimum energy performance standards program and the penetration of higher efficiency appliances in Nigeria such as:

⁴ Energy Efficiency Standards and Labels (S&L) are complementary policy tools, which are instrumental in promoting a sustainable energy path. S&L programs compare favorably to other governmental energy policies because of their low cost of implementation and ability to transform the market of appliances in the long term.

⁵ MEPS are regulations that prescribe a minimum energy performance for equipment or appliances. Energy efficiency labels are informative labels affixed to manufactured products indicating their energy performance and aiming at changing the perception and purchasing habits of customers. Energy Efficiency Standards and Labels (S&L) are complementary

- Lack of understanding of the potential for reducing energy demand through energy efficiency at the end-use sector and little interest to develop relevant policies to transform the markets;
- Lack of knowledge in the ministries and institutions on how to specifically proceed to implement and enforce energy efficiency regulations and how to develop support energy efficiency schemes such as standards, codes, certification and labels in order to speed up the market transformation process.
- Lack of capacity, and procedure in the development of the legal frame work by the Legislative Arm of Government and the absence of information, knowledge and culture to understand the need for the action by the Legislative Arm of Government to use both the budget and oversight tool to ensure effective regulation and guidance of the process of effective implementation of Energy efficiency policy.
- Absence of research materials and data to feed into the Bill and other Legal instruments to enable it meet the needs and object of energy efficiency programmes
- Heavily subsidies energy usage regime which distort the cost and effect of inefficient consumption of energy.
- Little information is available at the government level on the potential impact and cost effectiveness of Energy Efficiency regulation.
- Absence of policy framework and regulations to introduce legal energy efficiency requirements.
- Customers lack information about the availability of energy efficient equipments and the cost effectiveness of investing in efficient appliances.
- Retail staff and commercial staff do not pay attention and do not know how to market energy efficient appliances. This and the former point leads retailers not to offer a sufficient range of efficient equipment because of the low demand for this type of appliance.
- Local medium size manufacturers lack capacity to develop and market more efficient appliance and are uncertainty about the market demand of high efficiency models.
- Little national experience and installations for testing household appliances according to international standards.

The project has been designed to erase some of the most significant barriers above and allow a faster transformation process for the market. Each outcome has been selected to address one particular category of barriers.

The project comprises a market transformation of lighting products with the ultimate objective to prepare a phase out of energy inefficient incandescent light bulbs in Nigeria. This activity will be done in partnership with the government of Cuba who has decided to provide technical assistance in this area to the government of Nigeria. Cuba was the first country in the world to totally ban incandescent lighting and replace incandescent bulbs with high quality energy savings compact fluorescent lamps.

It is estimated that taking the case of energy efficiency for domestic refrigerators, implementation of standards and labeling directives under the project in Nigeria would result up to 50% improvement in 5 year period whereas otherwise, with a business as usual situation, it would have taken from 10 to 15 years for this to be achieved. At the global level, the project will limit the growth in energy demand from the household sector, and will ensure measurable and sustainable global benefits in slowing the growth rate of GHG emissions resulting from the combustion of fossil fuels and the consumption of electric power, which in-turn will contribute to the mitigation of climate change. An estimation of the GHG reduction is provided in part C below.

B. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH NATIONAL/REGIONAL PRIORITIES/PLANS:

Owing to the country's size, growing population base and relatively vibrant economic activity, Nigeria offers a unique market outlet for business/processes in search for sizable economies of scale and replicability. Because of the above inherent attraction and appeal to consumer products and appliances, The Federal Government of Nigeria has pursued a major policy initiatives of improving the quality of imported products, to ensure that goods rejected by other countries are not dumped on the domestic market. As part of its National Energy Policy (August 2002), it has also established the goal of: (i) "ensuring the importation of the more energy-efficient equipment and machinery"; (ii) "promoting R&D activities in energy conservation and efficiency including the development and manufacture of energy-efficient equipment and machinery; and (iii) "promoting public awareness about the benefits of improved energy efficiency."

The National Energy Commission of Nigeria is particularly keen to encourage energy efficient end-use and willing to promote the most relevant policy framework.

C. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH [GEF STRATEGIES](#) AND STRATEGIC PROGRAMS:

The proposed project is expected to contribute to meeting the Climate Change focal area strategy and the GEF Strategic Program 1 (CC-SP1) “Promoting Energy Efficiency in residential and commercial buildings”.

The domestic sector in Nigeria already consumes a significant portion of the national electricity consumption, and is expected to increase with population and economic growth, which allows more households to rely on electrical appliances. By increasing the market penetration of energy efficient appliances, the growth in energy demand from the household sector will be limited, which in turn will slow the growth rate of GHG emissions resulting from the required generation to meet the demand. The public sector (national and local administration, education buildings, hospital, etc...) account for a significant portion of both the national energy and electricity demand. The proposed project will support the adoption and enforcement of verified energy efficiency requirements (typically energy efficiency standards, but also mandatory energy labels) for the local appliance industry and national appliance market. It is expected that the avoided electricity generation resulting from the project would lead to significant reduction of CO₂ emissions (direct project impact).

GEF funding for this project will be critical to secure the said global benefits. Moreover, it will gain from and also contribute further to the international experiences and lessons learnt in promoting EE standards and labels in other countries.

D. JUSTIFY THE TYPE OF FINANCING SUPPORT PROVIDED WITH THE GEF RESOURCES: n/a

The GEF financial supports will be directed towards Technical Assistance, Training and Capacity Building of end-use energy efficiency. International expertise will be brought to Nigeria in order to provide the experience on world’s best practice in appliance energy efficiency and market transformation programme.

E. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:

The UN Common Country Assessment (2001) emphasized the need to make the production mechanism and processes of industries in the country more environmental friendly and efficient towards further reducing Nigeria’s contribution to GHGs in the context of sustainable poverty reduction. In responding to the global call to assist developing nations to attain the MDGs, the UN Development Assistance Framework for Nigeria (2002 – 2007) is focused on the promotion of resource conservation, as well as the advancement of R & D and transfer of appropriate technology, including energy technologies, for sustainable environmental management.

In the current Country Programme, UNDP resources have been allocated to supporting a national programme on “Energy and Environment for Sustainable Development”. The main elements of UNDP’s strategic approach include (i) strengthening capacity for the integration of energy and environmental concerns into development planning, policies and programmes; (ii) strengthening capacity to develop and implement a national renewable energy master plan; (iii) building partnerships between governments, private, non-governmental organizations and donors for resource mobilization to promote environmental sustainability for poverty reduction, including promotion of a public-private initiative for wide-adoption of renewable energy technologies. The implementation of this programme will positively complement the proposed project activities.

The envisaged market transformations of end-use equipment (appliances, lighting, etc...) target traded goods that are partially locally produced and imported for the majority of them. Equipment evolves on a regional market, throughout West and Central Africa. The design of energy efficiency Standards and Labels will be considered at national and regional levels. The regional level approach requires coordination and harmonization between several GEF market transformation projects in the region (Benin, Togo, Ghana, Ivory Coast, Nigeria, Senegal, Mauritania...). The ECOWAS (Economic Commission of West African State) whose headquarters are located in Abuja is by far the most suited regional institution to organize the coordination between the various GEF projects. Through ECOWAS, the S&L provision will progressively be expanded to all countries in the region. The present project will therefore liaise with the specific regional S&L activities under the umbrella of the GEF Programmatic Energy project for West Africa led by UNIDO. Provisions to undertake this coordination will be part of the coordination mechanism of the programme as envisaged in the PFD. UNDP will provide the technical and policy assistance based from its experience in S&L implementation around the world.

Activity 4 on promotion of energy efficient lighting will benefit from the GEF-supported Global Market Transformation for Efficient Lighting Initiative implemented jointly by UNEP/UNDP as well as from the unique experience from government of Cuba.

F. DISCUSS THE VALUE-ADDED OF GEF INVOLVEMENT IN THE PROJECT DEMONSTRATED THROUGH INCREMENTAL REASONING :

As mentioned in part A, Nigeria is faced with an ever growing demand for electricity from the household sector. Attempts to limit this demand growth are faced with many hurdles. Without GEF support, these hurdles will remain and will result in unabated growth of electricity produced and the resulting GHG emissions. Barriers to be addressed by the GEF supported project are: (1) Lack of Policy, Legal and Regulatory Framework, (2)Limited Institutional capability, (3)Low Public Awareness and Retailers Interest, (4) Lack of Capability from Local Manufacturers.

The barriers presented above slow down the penetration of higher efficiency appliances in Nigeria. The project has been designed to overcome some of these most significant barriers and allow a faster transformation process for the market. The GEF support to the project will also catalyze the intervention of many local co-financing partners of government and NGO origin. These partners would not provide their support to the initiative without GEF intervention.

G. INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS, THAT MIGHT PREVENT THE PROJECT OBJECTIVE(S) FROM BEING ACHIEVED, AND IF POSSIBLE INCLUDING RISK MITIGATION MEASURES THAT WILL BE TAKEN:

There are two areas of risks linked to the achievement of the outcome of this project; economic stability and stakeholder commitments. The climate change risk is not likely to prevent the objectives to be met and more likely to render the need for the project even more acute (increased use of air-conditioning).

| Risk | Mitigation measures |
|---|---|
| The economic stability Should the current rate of economic growth slow down, the need for the project and its achievements would be less dramatic as the capacity of households to acquire new or exchange their appliances would be constrained by the stress on their purchasing power | Such risk can not be mitigated by the project, but is unlikely because the trend of the last few years was consistently towards higher growth rate not lower. |
| The stakeholder commitment, poor or limited enforcement Many stakeholders are to be actively involved for a successful implementation of the project | Support of all the stakeholders has to be ensured through close co-operation established early in the design of the project |

H. DESCRIBE, IF POSSIBLE, THE EXPECTED COST-EFFECTIVENESS OF THE PROJECT:

A very preliminary and conservative estimate indicates that the impact of the project is at the minimum in the order of 5M tons of CO₂ reduction. The cost effectiveness of the GEF support can be estimated at USD 1 per ton CO₂ reduced.

Latest publications from the International Energy Agency and the Collaborative Labelling & Appliance Standard Programme (CLASP) formally assess that Greenhouse Gas emission reductions associated to sound energy efficiency legislation like the ones envisaged in the present project, generate large greenhouse gas reduction at negative cost to society: The possible extra incremental cost of energy efficient end-use (a domestic refrigerator, a light bulb, etc...) is largely compensated by the energy savings generated through the lifetime of the appliances.

I. JUSTIFY THE COMPARATIVE ADVANTAGE OF GEF AGENCY:

The comparative advantage of UNDP is justified by the nature of the project (being a “pure” capacity building / technical assistance project) and taking into account UNDP’s past experience with similar projects

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):

(Please attach the [country endorsement letter\(s\)](#) or [regional endorsement letter\(s\)](#) with this template).

| NAME | POSITION | MINISTRY | DATE (Month, day, year) |
|--------------|--|--|--------------------------------|
| Mr. C.E. OZO | Director & GEF Operational Focal Point | Federal Ministry of Environment, Housing and Urban Development | August 29 th , 2008 |
| | | | |
| | | | |

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for project identification and preparation.

| Agency Coordinator, Agency name | Signature | Date (Month, day, year) | Project Contact Person | Telephone | Email Address |
|--|--------------------|-------------------------------|------------------------------|-------------------------|---------------------------|
| Yannick Glemarec UNDP/GEF Executive Coordinator | <i>Y. Glemarec</i> | 4/23/2009 | Benoit Lebot | +221 33 869 06 76 | Benoit.lebot@un dp.org |