

Scientific and Technical Advisory Panel



The Scientific and Technical Advisory Panel, administered by UNEP, advises the Global Environment Facility (Version 5)

STAP Scientific and Technical screening of the Program Framework Document (PFD)

Date of screening: 06 October 2008

Screener: Douglas Taylor, STAP Secretary

Panel member validation by: N.H. Ravindranath

I. PIF Information

Full size project GEF Trust Fund

GEF PROJECT ID: 3789

GEF AGENCY PROJECT ID:

COUNTRY(IES): Benin, Burkina Faso, Burundi, Cape Verde, Cote d'Ivoire, Chad, The Gambia, Ghana, Guinea, Guiana-Bissau, Liberia, Mali, Mauritania, Niger, Senegal, Sierra Leone, Togo

REGION: AFRICA

PROJECT TITLE: GEF Strategic Programme for West Africa (GEF-SPWA): Energy Component

GEF AGENCY(IES): UNIDO, (select), (select)

OTHER EXECUTING PARTNER(S): World Bank, UNDP, UNEP, AfDB and Others

GEF FOCAL AREA (S): Climate Change, (select), (select)

GEF-4 STRATEGIC PROGRAM(S): CC-SP1, SP2, SP3, SP4 and SP5

EXPECTED NUMBER OF PROJECT UNDER THE PROGRAMME DURING CURRENT GEF TRUST FUND REPLENISHMENT PERIOD:

II. STAP Advisory Response

1. Based on this PIF screening, STAP's advisory response to the GEF Secretariat and GEF Agency(ies):
Consent

III. Further guidance from STAP

STAP consents to the West Africa Energy Component Program. The main goal is to ensure greater coherence in the formulation of renewable energy and energy efficiency programs and projects at the National level in West Africa. IPCC (2007) has highlighted that rapid growth in energy consumption per capita is occurring in many developing countries. However, Africa is the region with the lowest per capita energy consumption. Increasing prices of oil and gas compromise energy access, equity and sustainable development of the poorest countries and interfere with reaching poverty reduction targets that, in turn, imply improved access to electricity, modern cooking and heating fuels and transportation. The energy component of this GEF strategic program is to bring about significant global environmental benefits in these countries in the area of climate change, along with a number of local environmental benefits as well as important developmental benefits. The Components of this project aim to introduce Regional Renewable Energy Technologies, energy-efficient technology, Industrial, Residential and Public Sectors System Optimisation. However, STAP has the following points and suggestions to be taken into account during development of projects under this Program.

1. **Technological Interventions and Innovation:** The technology package includes a number of renewable energy and energy efficient technologies. For example for a given activity, such as: cooking or power, there are energy efficient options as well as renewable energy options. Further, there are multiple renewable energy options for the same activity.
 - o It is suggested to generate CO₂ or GHG emission profiles and trends - from different sectors and regions and according to different energy sources from National Communication Reports. This would enable identification of key energy using activities for intervention in the GEF projects for maximising the Global Environmental Benefit along with the Local benefits.
 - o There is a need for a scientific criteria for selecting the technological intervention for given activity such as cooking, decentralised power and process heat. Such scientific criteria should be adopted for selecting the technological interventions in different locations, in different countries.

- The program states that only bio-mass residue will be used for biomass power generation. A large number of studies have shown that the degraded and waste lands can be used for producing bio-mass feed stock sustainably for fuels and power. Thus the program could use a component of sustainable biomass energy or bio-fuel plantation.
 - It is not clear if the technology package considered includes bio- diesel or ethanol production.
 - The program also could consider adopting an area-based approach, where a village or cluster of villages or human settlement, in a contiguous manner, is selected and all the energy need for cooking, lighting, process heat and shaft power activities are considered, in other words an integrated energy approach.
 - The program also could include a scientific criterion for decision on adoption of decentralised power generation for off-grid (stand alone) applications or grid connected power systems.
 - The Component on “Sustainable and the innovative systems for urban transport” is inadequately developed in the program and needs to be strengthened.
2. **Barriers:** A large number of policy, legal and regulatory framework barriers, technology transfer and adaptation barriers, capacity, financing and institutional barriers are mentioned.
- It may be desirable to identify and rank the key barriers for intervention. A technique such as; AHP could be explored. The barriers vary for different stakeholders such as end-users (households), energy or power utilities, financing institutions and government departments.
 - The financial barriers particularly the high first cost or investment cost barrier for renewable energy or energy efficiency systems should be adequately addressed. Measures to address the incremental cost to the households, farmers and industries need to be addressed in the program.
3. **Baseline and Control Groups:** It is suggested to generate baseline trends in the rate of spread of energy efficiency and Renewable energy technologies. Further it will be useful to generate the GHG emission profile under the baseline scenario, probably based on the national Communication studies.
4. **Methods and Monitoring:** There is a need for strong methodology for monitoring for global and local environmental benefits under the baseline and GEF project scenarios.
5. **Risks:** The risk arising out of incremental investment or operation cost for the identified technological intervention and its implications on the rate of spread needs to be considered. The risk associated with the technology performance and reliability in providing the energy service needs to be considered and mitigation measures developed. The risk associated with provision of repair, servicing and replacement facilities needs to be addressed in the program.