

Scientific and Technical Advisory Panel



The Scientific and Technical Advisory Panel, administered by UNEP, advises the Global Environment Facility

STAP Scientific and Technical screening of the Project Identification Form (PIF)

Date of screening: 18th May 2009

Screeener: Lev Neretin

Panel member validation by: N.H. Ravindranath

I. PIF Information

Full size project **GEF Trust Fund**

GEF Project ID: 3943

Country: Federal Republic of Nigeria

PROJECT TITLE: Mini-grids based on Renewable Energy (small-hydro and biomass) Sources to Augment Rural Electrification

GEF AGENCY: UNIDO

OTHER EXECUTING PARTNERS: Federal Ministry of Energy, Energy Commission of Nigeria, and Federal Ministry of Environment, Housing and Urban Development

GEF FOCAL AREA: Climate Change

GEF-4 STRATEGIC PROGRAMS: SP 3: Promoting Market Approaches for Renewable Energy and SP 4: Promoting Sustainable Energy Production from Biomass

Name of parent program/umbrella project: GEF Programmatic Approach on Access to Energy in West Africa

II. STAP Advisory Response (see table below for explanation)

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

III. Further guidance from STAP

1. The project aims to install 2X0.5 MW of SHP and 2MW of biomass power. Will there be a single 2MW plant or several smaller scale biomass power plants totalling 2MW? STAP recommends considering capacity of the biomass power plants based on the availability of biomass feedstock within a short radius of a catchment area. Furthermore, a final decision on the capacity of the renewable energy systems can be made only after completion of the detailed assessment of the biomass as well as hydro resources.
2. Biomass resources are estimated at 83 million tones of crop residue and 61 million tonnes of animal waste. What is the current use pattern of these residues? Are they used as a fuel for cooking? If they are used as a fuel for cooking, then the opportunity cost of feedstock should be considered. STAP recommends considering as an option sustainable biomass energy production on degraded and waste lands. STAP recommends consulting with the existing work on bioenergy sustainability standards, particularly within the EU (http://ec.europa.eu/energy/res/sectors/doc/bioenergy/sustainability_criteria_and_certification_systems.pdf) instead of developing own standards proposed in Project Component 2.
3. Evaluation of the biomass combustion and gasification systems and designs is necessary to identify the most suitable design for local conditions.
4. STAP proposes conducting a barrier analysis for promoting SHP and biomass power systems.
5. Technical feasibility and commercial viability analysis of RE based mini-grid should consider potential competition between RE and fossil fuel based sources of energy (individual diesel generating sets). Feasibility of providing incentives to consumers and private sector to support RE based mini-grid should be explored during project preparation.
6. Medium – to long-term risks of climate variability and change should be considered as an integral part of RE resources mapping, particularly for SHP.
7. Project document should provide baseline assessment for regions where RE systems will be installed.

<i>STAP advisory response</i>	<i>Brief explanation of advisory response and action proposed</i>
1. Consent	STAP acknowledges that on scientific/technical grounds the concept has merit. However, STAP may state its views on the

	concept emphasising any issues that could be improved and the proponent is invited to approach STAP for advice at any time during the development of the project brief prior to submission for CEO endorsement.
2. Minor revision required.	<p>STAP has identified specific scientific/technical suggestions or opportunities that should be discussed with the proponent as early as possible during development of the project brief. One or more options that remain open to STAP include:</p> <ul style="list-style-type: none"> (i) Opening a dialogue between STAP and the proponent to clarify issues (ii) Setting a review point during early stage project development and agreeing terms of reference for an independent expert to be appointed to conduct this review <p>The proponent should provide a report of the action agreed and taken, at the time of submission of the full project brief for CEO endorsement.</p>
3. Major revision required	<p>STAP proposes significant improvements or has concerns on the grounds of specified major scientific/technical omissions in the concept. If STAP provides this advisory response, a full explanation would also be provided. Normally, a STAP approved review will be mandatory prior to submission of the project brief for CEO endorsement.</p> <p>The proponent should provide a report of the action agreed and taken, at the time of submission of the full project brief for CEO endorsement.</p>