

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 Project Identification Form (PIF)

Date of screening: May 12, 2010

Screeners: Guadalupe Duron

Panel member validation by: Nijavalli H. Ravindranath
Consultant(s):

I. PIF Information *(Copied from the PIF)*

FULL SIZE PROJECT GEF TRUST FUND

GEF PROJECT ID: 3844

PROJECT DURATION :

COUNTRIES : Bhutan

PROJECT TITLE: Promoting Sustainable Rural Biomass Energy

GEF AGENCIES: UNDP

OTHER EXECUTING PARTNERS: Department of Energy, Ministry of Economic Affairs, Royal Government of Bhutan

GEF FOCAL AREA: Climate Change

GEF-4 STRATEGIC PROGRAMS: CC-4;

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

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

III. Further guidance from STAP

STAP welcomes this proposal on sustainable rural biomass energy in Bhutan. The objective of the proposal appears well-aligned with the energy, and development needs of the country. Also, this is a very comprehensive proposal which considers all the components relevant to biomass energy namely; sustainable biomass production, biomass conservation and biomass conversion to electricity. Below, STAP provides recommendations on how to strengthen further the proposal.

1. Technology transfer - This project is more like a technology transfer project. Briquetting and biomass gasification based power generation technology seem to be new to Bhutan. Technology demonstration and technical and financial performance assessment is at the heart of this proposal.
2. Market development - As mentioned in Point 1, this is more a Technology demonstration and transfer project. Market development would be relevant only after the technical and financial viability is proven, which may happen at the end of the project. Thus the focus should be more on technology performance monitoring.
3. Land and biomass availability assessment - This component seems to be inherent though not explicitly mentioned. It is not clear from the project outputs whether the project involves raising sustainable energy plantations. The proposal should clearly develop criteria for raising energy plantations as well as sustainable harvesting of biomass feedstock for power generation.
- 3a. Furthermore, it is not clear what tree species will be used in the community tree planting initiatives. If a non-native species is used, STAP recommends doing a risk assessment of invasive species.
4. Bioenergy technology package - Modern bioenergy technologies are available for all applications in rural areas such as: cooking, lighting, shaft power, process heat and even biofuel for transportation. Several technologies are available namely: efficient cookstoves, biogas for cooking and small-scale power generation, biofuel production, etc. Thus it is suggested to include a systematic technology assessment for various applications particularly for rural areas in Bhutan. It is not clear why biogas is not included in the package, is it due to low temperatures during winter?
5. Sourcing of technologies - Are technologies such as efficient cookstoves, biogas systems, briquetting machines and biomass gasifiers locally available, or do they have to be procured from other countries? If the technology is going to be sourced from outside the country, a clear policy for accessing technology from other countries needs to be spelt out.

6. Barriers - Several barriers have been identified. There is a need for a systematic assessment and ranking of barriers to enable prioritizing interventions to overcome the barriers.

7. Scale, or capacity, of the systems- There is a need for careful selection of the number of units and capacity of the demonstration units. The number of units proposed seems to be small to enable market development.

8. Market risks - Describe in more detail the technical assistance for the BET system demonstrations, and how the technical assistance, or other knowledge, may assist small entrepreneurs address risks affiliated with entering the BET local market.

<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.	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: <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 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.
3. Major revision required	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. 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.