

# 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: 17<sup>th</sup> March 2009

Screener: Lev Neretin

Panel member validation by: N.H. Ravindranath

### I. PIF Information

Full size project      GEF Trust Fund

GEFSEC PROJECT ID: 3744

GEF AGENCY PROJECT ID: 40682

COUNTRY: PEOPLE'S REPUBLIC OF CHINA (PRC)

PROJECT TITLE: INTEGRATED RENEWABLE BIOMASS ENERGY DEVELOPMENT PROJECT

GEF AGENCY: ASIAN DEVELOPMENT BANK (ADB)

OTHER EXECUTING PARTNERS: MINISTRY OF AGRICULTURE; PROVINCIAL DEPARTMENTS OF AGRICULTURE

GEF FOCAL AREA: CLIMATE CHANGE

GEF-4 STRATEGIC PROGRAMS: STRATEGIC PROGRAM 3: PROMOTING MARKET APPROACHES FOR RENEWABLE ENERGY, STRATEGIC PROGRAM 4: PROMOTING SUSTAINABLE ENERGY PRODUCTION FROM BIOMASS

NAME OF PARENT PROGRAM/UMBRELLA PROJECT: N/A

PROJECT PROMOTES SOUND CHEMICAL MANAGEMENT (IF APPLICABLE): YES       No

### 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

2. STAP supports this project aiming at development of market environment for medium- to large-scale biomass plants (MLBGPs) in China. Particularly welcome is project proponents' intention to integrate decentralized power generation with grid connectivity and eco-farming systems. Project has strong links to sustainable development of rural communities in China. The GEF financing will be crucial to **addressing various technical and administrative barriers that currently prevent biogas plants from connecting to the grid**. This is a challenging project involving several actors and aiming to overcome several barriers. STAP has a few comments that should be considered when preparing the project document:

- A. **Technical Intervention:** Is the Anaerobic Digester (AD) design final and readily available? Is there need for any R&D on the design? Will the AD be adapted for different agro-residues? Normally, digesters designed for livestock residue may not be suitable for other organic/plant residues. Information on the major agro-residues and the compatible designs is necessary. How AD design will be adapted to physical conditions, particularly low temperatures during the winter season in some regions? Will the AD design allow for temperature adjustment? What is the plan for developing technical standards and construction procedures for MLBGPs? What is the status of the inter-phase between the decentralised bio-gas power system and the grid?
- B. **Institutional Arrangements:** What are the incentives for small farmers to supply livestock dung to the centralized plants? What are the institutional arrangements and incentives for the grid companies to accept the decentralised power?
  - PIF indicates that in the past national and provincial financial resources have been directed to promotion of household biogas digesters that became a common practice in PRC. Project proponents are advised to conduct a market barrier analysis for penetration of MLBGPs into rural areas identifying criteria for participation of individual farms in the scheme. How to avoid possible competition or build complementarity between small-scale bio-digesters and MLBGPs?

- Integrated approach to biomass waste collection to supply on-grid electricity requires establishment of a reliable supply chain of agricultural waste for steady operations of MLBGPs. How this will be assured?
- C. **Financial viability or cost –effectiveness:** Are MLBGPs financially viable? What is the sensitivity of the financial sustainability of MLBGPs to power tariff? A sensitivity analysis of the size of biogas power plants and the costs of grid connectivity to the power tariff will be useful.
- D. **Risks:** The risk of high first or investment cost being a deterrent for individual farms, rural communities and rural areas is not addressed. The time period required for developing technical standards and design and their field testing may be significant, which needs to be built into the project schedule.
- E. **Baseline and Monitoring:** Detailed baseline and monitoring methodology needs to be considered and provided. The CH<sub>4</sub> and CO<sub>2</sub> emissions at different phases/stages need to be fully accounted under the baseline/ current practices and the proposed MLBGPs.
- F. **Barriers:** A number of barriers prevent the full development of the different types of MLBGPs needed to achieve a significant expansion of biogas production. A good understanding of the barriers should be the first step during the project implementation. Scientific methods such as AHP could be adopted for identifying and ranking the barriers.

<i>STAP advisory response</i>	<i>Brief explanation of advisory response and action proposed</i>
<b>1. Consent</b>	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.
<b>2. Minor revision required.</b>	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: (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.
<b>3. Major revision required</b>	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.