

# 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: April 30, 2013

Screeners: Lev Neretin

Panel member validation by: Ralph E. Sims  
Consultant(s):

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

**FULL SIZE PROJECT    GEF TRUST FUND**

**GEF PROJECT ID:** 5289

**PROJECT DURATION :** 4

**COUNTRIES :** Guinea

**PROJECT TITLE:** Developing a Market for Biogas Resource Development and Utilization in Guinea

**GEF AGENCIES:** UNDP

**OTHER EXECUTING PARTNERS:** National Environment Committee (CNE); Ministry of Environment, Ministry of Energy; CERESCOR

**GEF FOCAL AREA:** Climate Change

### 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): **Minor revision required**

### III. Further guidance from STAP

1. The biogas potential in Guinea seems promising with some initiatives already under way as identified in this well constructed proposal. The project is well warranted. It looks at developing a market for medium to large-scale digesters.
2. It includes constructing and installing 2000 small family-sized units yet there is also a UNDP PRONIASSE project underway on this topic as described. It states this sub-program "will be subsumed as baseline to this GEF funded project". If so why is this included at section 2.6 under project Component 2? On page 7 it states under Component 2 that "while the baseline focuses on small scale bio-digesters with 6m3 average capacity, GEF funds will be used for large scale bio-digesters with 20 m3 capacity." It would be sensible if this project related only to medium to large scale digesters and not to include domestic scale digesters which tend to confuse the proposal. So the amount of funding allocated for these 2000 domestic scale digesters on page 2 should be removed.
3. Local manufacture of the large biogas plants will need to use overseas experience as mentioned. Biogas is corrosive. What materials will the digesters and balance-of-plant components be used for construction? Will they be designed locally or manufactured under license? This is an option worth considering since there are many manufacturers with experience and long-standing reputations for reliability.
4. The plants will also need good maintenance programs if a long working life is planned. Will the plants be large enough to have a full-time operator because maintenance of steel components due to corrosion is always an issue. This includes pumps, tanks etc. The life of a biogas plant (and hence the overall cost) is determined strongly by the quality of its maintenance programme.
5. It is not clear if the electricity/heat produced will be used to satisfy on-site needs of commercial enterprises or if the intention is to sell electricity or heat or both. Legal, regulatory, and institutional frameworks as well as business models will differ in these two cases. The information is requested at the CEO endorsement stage. Can it be assumed that the biogas produced will be direct combusted for heat applications? If not, and it is to be used in gas engines for stationary or vehicle applications, it will first need scrubbing (removal of CO<sub>2</sub> and H<sub>2</sub>S) which is not mentioned. It does state on page 8 that some gas will "displace the use of diesel generators for electricity production". Then scrubbing of the raw gas is essential - but it is not mentioned in the discussion. So is it included in the cost and GHG analyses?
6. Component 1 includes producing a resource map of the country's biogas potential with the focus on domestic applications. Producing a resource map is a good idea but, as stated above, it should be targeting larger scale plants. It

needs to be a map showing where the biomass feedstock resources are located from which the biogas can be produced. This can then be matched to possible sites of heat demand which should be nearby as transporting either the biomass, or the gas (after compressing in cylinders at an additional cost) are costly options. Also a thorough assessment based on technical, economic, financial and social costs of biogas production from different feedstocks is needed.

7. The risks outlined include micro-finance - which only applies to domestic scale so should this be deleted?

8. A Component 4 relating to monitoring and evaluation is missing. What are the indicators and milestones that will depict whether the project is successful or not?

STAP recommends that the project proponents develop specific indicators for monitoring and evaluating project impacts such as volume of fossil fuels replaced by biogas production (also converted into GHG reductions); amount of fossil fuel energy capacity retired from the grid; the amount of avoided GHG emissions with the increasing use of bio-based feedstocks/waste; market development indicators as well as human capacity indicators.

9. It is not clear how specifically the project will ensure that biogas production will reduce "the pressure on the forest resources and unsustainable land use". Obviously biogas used for domestic cooking will displace the demand for fuelwood - but also perhaps for industrial heat and diesel-fuelled electricity? And if so, to what degree?

<i>STAP advisory response</i>	<i>Brief explanation of advisory response and action proposed</i>
<b>1. Consent</b>	<p>STAP acknowledges that on scientific or technical grounds the concept has merit. However, STAP may state its views on the concept emphasizing any issues where the project could be improved.</p> <p>Follow up: The GEF Agency is invited to approach STAP for advice during the development of the project prior to submission of the final document for CEO endorsement.</p>
<b>2. Minor revision required.</b>	<p>STAP has identified specific scientific or technical challenges, omissions or opportunities that should be addressed by the project proponents during project development.</p> <p>Follow up: One or more options are open to STAP and the GEF Agency:</p> <ul style="list-style-type: none"> <li>(i) GEF Agency should discuss the issues with STAP to clarify them and possible solutions.</li> <li>(ii) In its request for CEO endorsement, the GEF Agency will report on actions taken in response to STAP's recommended actions.</li> </ul>
<b>3. Major revision required</b>	<p>STAP has identified significant scientific or technical challenges or omissions in the PIF and recommends significant improvements to project design.</p> <p>Follow-up:</p> <ul style="list-style-type: none"> <li>(i) The Agency should request that the project undergo a STAP review prior to CEO endorsement, at a point in time when the particular scientific or technical issue is sufficiently developed to be reviewed, or as agreed between the Agency and STAP.</li> <li>(ii) In its request for CEO endorsement, the Agency will report on actions taken in response to STAP concerns.</li> </ul>