

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: January 30, 2012

Screener: Thomas Hammond

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

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

FULL SIZE PROJECT GEF TRUST FUND

GEF PROJECT ID: 4520

PROJECT DURATION : 4

COUNTRIES : Guyana

PROJECT TITLE: Sustainable Energy Program

GEF AGENCIES: IADB

OTHER EXECUTING PARTNERS: Office of the Prime Minister

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

STAP welcomes this project - as the approach of reducing GHG emissions by supporting sustainable energy systems to displace oil-fired power generation is valid. This may meet all the energy needs of Guyana one day, eliminating the need for imported fossil fuels. However, the following issues are of some concern and further clarification is needed:

1. Issues of scientific and technical merit.

- It is unclear why the focus is on RE for serving the "central grid". The focus of the project is to serve the needs of the remote/rural areas (which RETs are also more suited to serve) and seems to be unserved in a current state.
- GEBs claimed do not provide the assumptions for calculations.
- Even though the PIF mentions sustainable energy strategy for Guyana, there is no output mentioned that aims at delivering a national sustainable energy strategy or plan.
- The usual initial step when undertaking a RE project is to assess the resource (e.g. the mean annual wind speed, solar irradiation level, river flows and seasonal variations). Yet funding for four wind and solar monitoring stations is being sought. If such resource data is not yet available, then this has to be the first step before cost and mitigation assessments can be made with any degree of accuracy. Available hydro resources also need detailed assessment.
- No timeline or milestones are presented for the various components of the project. It would make sense to undertake RE resource assessments in the first instance.
- The target installed capacities for hydro, solar PV and wind appear feasible, but the reasons as to why these specific targets were selected are not explained. For example, why specifically 300 kW of wind and 1,334 kW solar PV and not say 600 kW wind and 580 kW PV?
- 180 kW of solar PV on-grid is to be installed together with 1,334 kW for rural electrification. No cost evaluations are provided to justify this share of total PV, or indeed why the mix of RE technologies as proposed was selected.
- If 14 isolated communities out of 100 in the interior already have solar PV installed by public programs (page 7), why are further "pilot demonstrations" needed?
- 300 kW of wind capacity could be one medium-scale turbine, or 300 small 1 kW turbines, or somewhere in between. Whichever option is planned, repair and maintenance should not be under-estimated, although this topic is included in the training workshops.
- The integration of variable solar and wind generation into either small, autonomous power supply systems or centralised grids is a challenge (see IPCC Special Report on Renewable Energy (SRREN), 2011). Energy storage is also costly. Yet this issue is not discussed in the PIF.
- The rationale for EE piece of Component II outlined is unclear and appears to be only in awareness campaigns.

2. Climate risk / resilience. The risks, as outlined in Section B4, are reasonably comprehensive. What is missing is any analysis of floods or dry periods that might impact on hydro projects (which are assumed to be run-of-river as opposed to storage dams – though this is not stipulated, including for the major 150 MW project). Increases in cloud cover could reduce the level of solar radiation received in future. For wind turbines, increased risks of stronger hurricanes could be a serious issue. The Caribbean is in fact identified in this regard in the recently released IPCC Special Report Managing the Risks of Extreme and Disasters to Advance Climate Change Adaptation [1].

3. Additional considerations needing clarification

- "80% of the country is forest, fertile area that could be exploited for economic development" (page 4). Please, clarify if the project implies future potential deforestation.
- Social issues as outlined are positive but did not mention the potential education and health benefits, nor links to any related policies.

4. Monitoring and evaluation. Establishing an Executing Agency and a Project Implementation Unit is commendable, as well as undertaking the various awareness campaigns and information dissemination objectives. However, little consideration has been given as to what indicators will be used to assess whether the objectives of the program have been met or not, either during EE and RE project developments or on completion of the program after the planned 6 year period. No specific funding for undertaking monitoring and evaluation was identified, nor who might undertake this task.

Footnotes:

[1] See http://www.ipcc-wg2.gov/SREX/images/uploads/IPCC_SREX_slide_deck.pdf

<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.