

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 10, 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: 5364

PROJECT DURATION : 5

COUNTRIES : India

PROJECT TITLE: Improving Rural Energy Access in Deficit States

GEF AGENCIES: World Bank

OTHER EXECUTING PARTNERS: Ministry of New & Renewable Energy

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. Providing electricity in India to meet the growing demand is a challenge and RE certainly has a role to play. This proposal aims to increase electricity access by developing off-grid system for remote rural areas not yet linked to the growing grid. The barriers to this endeavor are clearly laid out and the indicators relating to MRV are provided. In essence the concept is to set-up incentives for private sector investment where: Generation cost + profit= affordable tariff revenue + MNRE 30% subsidy + GEF VGF.

2. Project interventions and baseline activities transfer most financial risks to potential low-income customers and independent power producers. Detailed cost assessment analysis has not been cited, but it seems doubtful that "affordable tariffs" charged to low income households will be a sustainable option. It is not clear why proponents do not consider FiT as a common tool addressing higher RE costs, though there is a cost involved with such a policy.

3. Success of project interventions depends largely on having a detailed technology assessment considering different technology options and available resources. It is not clear if such assessment is planned and if so, who will be paying for it. Costs for such assessments usually have to be covered using public funds.

4. Who will operate installed systems? The developer? Depending on the mix of RE systems involved, (wind and solar being variable and hence non-dispatchable), there will be challenges of integration into the system and the means to follow the ever varying daily and seasonal load profiles. Even at the mini-grid level this could well involve some form of energy storage system, load shedding, demand side management, or back-up for variable supply inputs. So the proposal is more complex than a developer simply building a power plant and hoping to sell the electricity generated.

The information provided in the PID is insufficient to understand who will be responsible for O&M of the mini-grids once established if a private developer exists as seems to be the option in some cases. It is doubtful that full O&M needs and costs could be covered by local communities without assistance.

5. It is not clear what is the current legal, policy and institutional framework to support independent power producers and private developers. Without such frameworks, the risks are high that project interventions will be short-lived.

6. STAP recommends that project proponents consider support for integrated energy systems in remote communities to satisfy needs for key energy services such as cooking, lighting, powering machinery (including pumps) and process heat etc.

7. The PID does not provide any information about potential GHG savings and global environmental benefits and such information have to be collected during project preparation.

8. STAP assumes that residential cooking, at least in some remote villages, is largely satisfied using wood which results in deforestation. How does the project intend to support sustainable/cleaner energy sources for residential cooking, or build necessary links with other ongoing complementary initiatives/projects?

9. What is also not clear since the concept revolves around mini- and micro-grids is who will pay for the construction of the distribution lines? This could be a relatively high share of total costs where for example a good wind or hydro site is located some distance away from the load demand.

10. A further complication could be the future need to expand the system as electricity demand increases (as it inevitably will do from increased population, more appliances added etc.). Is the developer expected to construct lines (including transformers etc.) of sufficient capacity to meet future expansion? This will add to the costs that may not see a return on investment for several years but would be cheaper in the long run.

The sort of government "hands-off" approach as advocated, and without any investment in infrastructure (and possibly without regulation of the electricity system), needs careful consideration in consultation with potential bidders from industry .

<i>STAP advisory response</i>	<i>Brief explanation of advisory response and action proposed</i>
1. Consent	<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>
2. Minor revision required.	<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: (i) GEF Agency should discuss the issues with STAP to clarify them and possible solutions. (ii) In its request for CEO endorsement, the GEF Agency will report on actions taken in response to STAP's recommended actions.</p>
3. Major revision required	<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: (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. (ii) In its request for CEO endorsement, the Agency will report on actions taken in response to STAP concerns.</p>