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: October 17, 2012 Screener: Lev Neretin

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: 5063
PROJECT DURATION : 4
COUNTRIES : Iraq
PROJECT TITLE: Catalysing the Use of Solar Photovoltaic Energy
GEF AGENCIES: UNDP
OTHER EXECUTING PARTNERS: Ministry of Environment
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

The project aims at reducing GHG emissions in Iraq by promoting distributed solar power.

1. STAP commends the project for a very detailed presentation of the baseline project scenario, preliminary analysis of the technologies and explanation of the components, outputs and activities.

2. "With the exception of hydropower, deployment of renewable sources of energy is projected to remain below Iraq's potentialâ€¦. While Iraq has a large potential for non-hydro renewables, particularly solar, the costs of exploiting this for power generation remain high relative to alternative fossil fuel technologies. Due to this, and based on existing policies, there is only a small increase in non-hydro renewables, such as solar, over the Outlook periodâ€¦ The Ministry of Electricity has a number of off-grid solar research stations, with capacity of a few tens of megawatts (MW). Despite the strength of the resource, grid-connected solar electricity generation â€“ either through photovoltaics (PV) or concentrating solar power (CSP) â€“ will remain a very high-cost option, compared to fossil fuels. The Central Scenario assumes a small amount of solar PV capacity â€“ less than 50 MW â€“ is added by 2035. Outside the electricity sector, solar water heating is likely to be a highly attractive option for buildings if subsidies for fossil-fuel alternatives are phased out." [The above was quoted from the just released IEA study Special Outlook Report on Iraq (http://www.iea.org/publications/freepublications/publication/WEO_2012_Iraq_Energy_OutlookFINAL-1.pdf)] .

3. The project's main focus is on the promotion of distributed solar power through rooftop solar power systems for AC and water heating as well as support for the distributed solar power plant of 5 MW. While a lot of information is presented on the status of these two technologies in Iraq, in light of the IEA report conclusions serious doubts remain that these two technologies will be cost-effective without strong financial incentives including support for domestic production of solar panel components. STAP recommends a preliminary cost-benefit analysis of solar power applications for different end users, in particular for air-conditioning. It is not clear if solar PV options would be a cost effective solution within a reasonable time frame for energy intensive end uses such as air-conditioning. STAP suggests that data is likely available, if not in Iraq from other countries in the region, that would provide an assessment of the cost effectiveness of utilizing SPV power for different end uses and in particular for air-conditioning. The cost of SPV electricity for air-conditioning applications is likely to be high. Although this is outside of STAP's area of expertise, the Panel would like to raise the issue of consumer ability to pay - and how consumers will be persuaded to adopt these technologies even with subsidies.

4. Similarly, high investment costs related to the proposed solar power installations could be a major risk in large scale promotion of this technology. It may be necessary, therefore, to consider options other than subsidizing the solar power

installations. The ambiguity of the cost-effectiveness consideration of the proposal for support technologies represents a large risk in this project, and puts its long-term sustainability and replication into question. STAP recommends mediating this risk at least partially by strengthening support to PV together with hydropower technologies at the national level through financial incentives, awareness raising, along with policy and institutional reforms. Integration of these potential RE sources into the grid on the one side and support for decentralized/distributed RE on the other should receive more emphasis in this project than that currently described in components 2 and 3 (for IPP facilitation). Given the critical importance of renewables in the future energy mix in Iraq, concomitant with the multiple barriers to widespread adoption compared to fossil fuel-based energy, the project should strengthen support for RE policy and institutional reform at the expense of site-specific technology demonstrations. In the longer term, the project aims to sell surplus electricity to the grid by establishing feed-in-tariff schemes. Under this scenario, the cost of feeding the power from a decentralized source to the grid and attractiveness of the price of electricity needs to be clearly established from the outset. Finally, while the project aims to promote solar power air-conditioner/ water heaters, the PIF is not clear whether water heating will be through thermal or PV means. Solar water heaters are likely to be very cost effective for water heating, as opposed to electric options.

STAP advisory response	*Brief explanation of advisory response and action proposed*
1. Consent	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. 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.
2. Minor revision required.	STAP has identified specific scientific or technical challenges, omissions or opportunities that should be addressed by the project proponents during project development. 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.
3. Major revision required	STAP has identified significant scientific or technical challenges or omissions in the PIF and recommends significant improvements to project design. 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.