

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 15, 2013

Screeener: Nijavalli H. Ravindranath

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: 5379

PROJECT DURATION : 4

COUNTRIES : South Africa

PROJECT TITLE: Industrial Energy Efficiency Improvement in South Africa through Mainstreaming the Introduction of Energy Management Systems and Energy Systems Optimization

GEF AGENCIES: UNIDO

OTHER EXECUTING PARTNERS: Department of Energy, Department of Trade and Industry and Department of Environmental Affairs, Republic of South Africa

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): **Consent**

III. Further guidance from STAP

The project aims to accelerate and expand the introduction of energy management and industrial energy systems optimization following international ISO 50001 energy management standards in the industrial sector of South Africa. This is a very important project given the high energy intensity of South African industries and the large potential to reduce GHG emissions. STAP has the following comments and suggestions to be considered during the next phase.

1. The direct GHG emission reduction projection averages around 6000t CO₂ for each of the 150 pilot projects (though the range from large industries to SMEs will be wide). This is based on a total energy savings of 1000 GWh per year but how this figure was calculated is not shown. "The project will lead to considerable energy savings and GHG emission reductions". No indication of how the 150 pilots will be selected is given or the assumptions used in these calculations. (Indirect emission reductions of "4.5 to 5.0 tons of CO₂eq" (page 10) seems low- perhaps it should be Mt). STAP recommends providing further details on the calculations, and how the 150 pilots will be selected.
2. On economic viability of the industrial EE interventions, capacity building and promotional activities alone may not lead to large scale market development. What may be critical for the industrial users is the payback period or IRR. What happens if for given EE interventions the payback period is long and IRR is not attractive.
3. The Table Section B, 4.0 states that around 150 individual enterprises will be selected to implement energy efficient programmes (EnMS and ESO). It seems that GEF funding will be used to promote these (Table B, 4.1) and assist to develop bankable projects (page 9), with the co-financing (\$10.25 M) used for the large pilot programme (of 50 + 100 pilots at ~\$60,000 each) but in what way is not clear. Is it for monitoring the energy savings and then promoting them by dissemination of the results, or to undertake an analysis of baseline energy use and then install appropriate energy efficient technologies? A good assessment is made of the previous, on-going UNIDO/DFID/SECO project, being implemented since 2010, for the effectiveness of different interventions in promoting large scale adoption of EE technologies. It is not clear how the outcomes of this project can be separated, monitored and measured from those of this new GEF project to be superimposed.
4. Capacity building is a key component. Training has begun under the existing SECO project with training courses having started in 2010 on a range of key topics. The GEF project is aimed to expand upon this introductory work, disseminate the outcomes, help develop a regulatory environment, and incorporate EE methodologies into higher education. The existing project has used external international experts to train local experts. It is not clear who exactly will develop the higher level programmes and short courses envisaged. Is an EnSM or ESO course likely to be 1 day, I

month, or 1 year? Training is a key part of this programme so greater clarity on what level of teaching and technical expertise will be required needs further consideration. How many trainers will be needed at each level? How will meeting this component successfully be measured?

5. Awareness and promotion actions (Component 5.0) are not defined explicitly. STAP recommends detailing further who will take the responsibility for achieving the goals of this component, and how will success be measured?

6. Synergy with National Communications and BUR activities to be implemented in South Africa should benefit from the knowledge and information generated from these two projects.

7. There are a few related programs and projects which may be relevant to this project:

A. The National Cleaner Production Centre of South Africa (NCPC-SA) is a national programme of government that promotes the implementation of resource efficiency and cleaner production (RECP) methodologies to assist industry to lower costs through reduced energy, water and materials usage, and waste management. It is hosted by the CSIR on behalf of the Department of Trade and Industry (DTI).

B. Industrial Energy Efficiency Improvement Project in South Africa. A national project was introduced in 2010 to improve the capacity of South African industry to use energy resources more efficiently and productively, now and in future years. This effort focuses on energy management and cost-effective systems optimisation techniques.

C. ESMAP: Implementing Energy Efficiency and Demand Side Management South Africa's Standard Offer Model. Low carbon growth country studies program mitigating climate change through development.

D. KFW: Green Energy Efficiency Fund. Programme supported by the German Cooperation and Development Ministry.

i. In order to support and promote energy efficiency and renewable energy investments the Industrial Development Corporation (IDC) and the German Development Bank (KFW) have partnered, under the framework of the South African-German Financial Cooperation and established a R500 million facility for energy efficiency and small scale renewable energy projects.

ii. The IDC will drive awareness of the need for energy efficiency among enterprises through the promotion of the Green Energy Efficiency Fund which supports the IDC's alignment to the Industrial Policy Action Plan (IPAP2) and the New Growth Path with specific focus on growing the Green Economy

The industry chapter of the IPCC 4th Assessment Report - Mitigation, Working Group 3 would be a useful resource to identify the major opportunities for EE in the various industry sub-sectors - <http://www.ipcc-wg3.de/assessment-reports/fourth-assessment-report/.files-ar4/Chapter07.pdf>

<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:</p> <p>(i) GEF Agency should discuss the issues with STAP to clarify them and possible solutions.</p> <p>(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:</p> <p>(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.</p> <p>(ii) In its request for CEO endorsement, the Agency will report on actions taken in response to STAP concerns.</p>