

# 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: November 08, 2017  
Screener: Sunday Leonard  
Panel member validation by: Ralph E. Sims  
Consultant(s):

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

<b>FULL-SIZED PROJECT</b>	<b>GEF TRUST FUND</b>
<b>GEF PROJECT ID:</b>	9743
<b>PROJECT DURATION:</b>	5
<b>COUNTRIES:</b>	Nigeria
<b>PROJECT TITLE:</b>	De-risking Sustainable Off-grid Lighting Solutions in Nigeria
<b>GEF AGENCIES:</b>	UNDP
<b>OTHER EXECUTING PARTNERS:</b>	Energy Commission of Nigeria, Rural Electrification Agency, Standards Organisation of Nigeria, Federal Ministry of Environment, Ministry of Energy
<b>GEF FOCAL AREA:</b>	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):  
**Concur**

### III. Further guidance from STAP

1. This project seeks to promote private sector investment in sustainable off-grid lighting technologies by establishing a sound policy environment that facilitates the creation of a self-functioning and sustainable market in Nigeria. The project is linked with the UNEP/UNDP/CCAC project "Reducing Black Carbon Emissions by Transitioning to Clean and Sustainable Lighting."
2. Identified barriers to achieving this objective include uncertainty in the power market, low level of awareness and acceptance of solar power, inadequate technology and hardware, poor payment service and lack of financial investment. This project aims to use the UNDP's Derisking Renewable Energy Investment (DREI) methodology to overcome these barriers through components targeting policy improvement, attracting investments, and creating capacity and awareness.
3. Electricity access and unreliability of the grid are challenges for Nigeria with 60 M diesel generators installed to provide direct power or back-up. Kerosene lighting is also typical, consuming 11 M liters a day and emitting CO<sub>2</sub> and black carbon. Solar lanterns and solar pico-PV home systems, therefore, have good potential for greater deployment, especially if linked with pay-as-you-go finance.
4. Kerosene lighting comes with significant health and safety concerns. More so, it contributes to climate change since kerosene is a fossil fuel and kerosene lamps are a substantial source of potent black carbon (<http://pubs.acs.org/doi/abs/10.1021/es302697h>; [http://news.illinois.edu/NEWS/12/1210kerosene\\_TamiBond.html](http://news.illinois.edu/NEWS/12/1210kerosene_TamiBond.html); Jacobson et al., 2013: [https://www.brookings.edu/wp-content/uploads/2016/06/04\\_climate\\_change\\_clean\\_energy\\_development\\_hultman.pdf](https://www.brookings.edu/wp-content/uploads/2016/06/04_climate_change_clean_energy_development_hultman.pdf) and Tedsen et al., 2013: <https://www.ecologic.eu/sites/files/publication/2014/black-carbon-and-kerosene-lamps-study.pdf>).

5. The project will support the planned phase-out of kerosene subsidies in Nigeria and help develop policies to improve import regulation, enforce quality standards, support investment and improve awareness. Access to capital and equipment will involve USD 6 M of co-financing, mainly from World Bank loans through the IFC Lighting Africa initiative and equity from the private sector.

6. Focusing on sustainable off-grid lighting also provides an opportunity to implement energy efficient lighting. This project could benefit from the vast amount of knowledge already available through the UN Environment-led initiative Environment United for Efficiency including energy efficiency and sustainable lighting, (<http://united4efficiency.org/>). It is recommended that this knowledge should be explored.

7. Around 93 kt CO<sub>2</sub>-eq are projected to be avoided during the 5 year project period by displacing 17,700 kerosene lamps with solar lamps and reducing diesel generation in rural communities by developing 10,000 solar homes. Projecting additional uptake above the baseline as a result of this GEF project is not possible with any degree of accuracy, but the estimate of around 4.5 Mt of consequential emission reductions seems plausible. Black carbon emissions reduction is also expected with the associated climate, environmental and health benefits. Hence, the climate benefit from this project will be increased when this is included. See the 2015 STAP guidance document on black carbon at <http://www.stapgef.org/taxonomy/term/394>.

<i>STAP advisory response</i>	<i>Brief explanation of advisory response and action proposed</i>
<b>1. Concur</b>	In cases where STAP is satisfied with the scientific and technical quality of the proposal, a simple “Concur” response will be provided; the STAP may flag specific issues that should be pursued rigorously as the proposal is developed into a full project document. At any time during the development of the project, the proponent is invited to approach STAP to consult on the design prior to submission for CEO endorsement.
<b>2. Minor issues to be considered during project design</b>	<p>STAP has identified specific scientific /technical suggestions or opportunities that should be discussed with the project proponent as early as possible during development of the project brief. The proponent may wish to:</p> <p>(i) Open a dialogue with STAP regarding the technical and/or scientific issues raised.  (ii) Set a review point at an early stage during project development, and possibly agreeing to terms of reference for an independent expert to be appointed to conduct this review.</p> <p>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.</p>
<b>3. Major issues to be considered during project design</b>	<p>STAP proposes significant improvements or has concerns on the grounds of specified major scientific/technical methodological issues, barriers, or omissions in the project concept. If STAP provides this advisory response, a full explanation would also be provided. The proponent is strongly encouraged to:</p> <p>(i) Open a dialogue with STAP regarding the technical and/or scientific issues raised; (ii) Set a review point at an early stage during project development including an independent expert as required.</p> <p>The GEF Secretariat may, based on this screening outcome, delay the proposal and refer the proposal back to the proponents with STAP’s concerns.</p> <p>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.</p>