

# 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: September 18, 2011

Screener: Christine Wellington

Panel member validation by: Hindrik Bouwman  
Consultant(s):

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

**FULL SIZE PROJECT    GEF TRUST FUND**

**GEF PROJECT ID:** 4508

**PROJECT DURATION :** 5

**COUNTRIES :** Algeria

**PROJECT TITLE:** Environmentally Sound Management of POPs and Destruction of PCBs Wastes

**GEF AGENCIES:** UNIDO

**OTHER EXECUTING PARTNERS:** Ministry of Land Planning and Environment (MATE)

**GEF FOCAL AREA:** POPs

### 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

This proposal focuses on the environmentally sound management of POPs. The PIF states that the objective of this project is to "assist Bangladesh (should read "Algeria") in fulfilling its obligations under the Stockholm convention by (1) reducing the release of PCBs to the environment, and (2) improving healthcare waste management in the country to reduce the emission of dioxin/furan from disposal activities." It seeks to do this, inter alia, through strengthening of legislative frameworks, and targeted technical assistance to improve the infrastructure for environmentally sound management of PCB wastes (included setting up of safe (interim) storage sites for PCBs and POPs wastes, identification of destruction technology and disposal options. Plans are to work with five cities in the country, three of which are on the Mediterranean sea (Algiers, Oran, Annaba), one of which is located at an oasis (Laghouat), and one located on the banks of the Rhumel River which joins the Mediterranean some 80 miles away (Constantine).

Apart from their high log KOW values which permit strong adsorption to nonpolar surfaces (eg organic carbon) and lipophilic matrices in food chains (both aquatic and terrestrial, PCBs are marked by a number of chemical and physical characteristics, not the least of which are:- a) the myriad of congeners in existence, with attendant different levels of chlorination, b) the difference in behaviours and break down products of these congeners when released to the environment, c) the difference in their degree to be metabolised and non-uniform break down products within organisms, d) their readiness to volatilise when spread over soil and water surfaces, e) their short atmospheric residence times (in the order of months), allowing them to vaporize and be re-deposited, cycling back between land and waters surfaces and air. Given these characteristics alone, it is hardly surprising that site-specific uniqueness has played a role in the recorded behaviour of PCBs in contamination cases around the globe. When one further considers that Climate Change is impacting, inter alia, on atmospheric temperature, rainfall regime, storm frequency and attendant drought/flood cycles, it is clear that in considering the potential impacts of PCB releases, it is equally important to look at the physical-chemical characteristics of the congener along with the natural geological and hydrological features of the area of contamination, and the fluctuating atmospheric conditions (temperature, rain, wind, vulnerability to storms etc) of the site.

At this time, STAP is in the process of finalising a guidance document (for November Council 2011) on POPs Disposal Technology in GEF projects, with a focus on what exactly constitutes environmentally sound disposal of POPs, and what disposal technologies can achieve it. This follows initial contributions from the GEF (through the STAP) in 2003/2004 in relation to available non-combustion technologies for POPs disposal; and apart from this, the Basel Convention, acting in concert with the Stockholm Convention, has issued and periodically updates technical guidelines on POPs management. This guidance includes disposal requirements and listings of technologies that may be applicable. To date, these guidelines have been generally adopted by the Stockholm Convention as the standard

reference. There have also been comprehensive reviews of technologies which are periodically published, and on-line libraries of technology data sheets are maintained by the Basel Convention and supporting organizations.

The Fifth Conference of the Parties (COP-5) to the Stockholm Convention invited the Basel Convention to continue this work, specifically with respect to establishing the levels of destruction and irreversible transformation of chemicals to ensure POPs characteristics are not exhibited; considering methods that constitute environmentally sound disposal; defining low POP-content in wastes; and updating general technical guidelines as well as preparing or updating specific technical guidelines for environmentally sound waste management (SC-5/9). Likewise, in its decision SC-5/20, COP-5 further encourages the GEF and parties in a position to do so to facilitate the transfer of appropriate technologies to developing countries and countries with economies in transition (CEITs).

The findings of the soon-to-be-published STAP document state, inter alia, that:

".... the destruction or irreversible transformation of POPs in an environmentally sound manner is not limited by the availability of appropriate technologyâ€”there are a number of such technologies. Rather, it is limited by the practical ability to assemble and apply them--particularly in developing countries and CEIT's - in a manner that is environmentally effective, timely, and cost effective..... Destruction cannot be addressed in isolation. The application of POPs disposal technology should be viewed as one part of an overall POPs management process or system. This system includes steps taken in advance of the actual disposal or destruction to identify, capture, secure, and prepare POPs stockpiles and wastes for disposal. It also includes post-destruction steps to manage emissions, by-products and residuals. The management process depends upon high-quality information regarding POPs stockpiles and waste, and the effectiveness of the institutional and regulatory framework under which POPs management is undertaken."

Taking into consideration all of the above, the recommendation therefore is that in preparing the project document, there be:-

- a) A reassessment of the risks thus far identified in Table B4 (Risk Table). There needs to be a clear Assessment of risks associated with sites handling PCBs (including interim storage sites), present or future. This is particularly critical since 2/3 of Algeria's population lives on 5% of the country's land area at the coast, and the selection of cities involved in this project more or less reflects this phenomenon. The two inland cities are located at an oasis and river. So there is definitely a risk to transport of contamination. Risks can be related to vulnerability for environmental contamination and threat to global environmental benefits associated (eg) with: (i) natural site features (hydrological or geological), (ii) vulnerability to climate-induced changes in atmospheric conditions (rainfall regime, temperature-related changes in environmental behaviour of the specific congeners that predominate, changes in storm frequency/intensity etc).
- b) Specific consideration of the Basel guidelines along with other GEF and Stockholm guidance (including the STAP Advisory document that will soon be available) in all steps of creating an environmentally sound management system for PCB disposal. This should ensure that there is clear attention made to the identification and associated capacity needs of the pre-destruction steps (eg. characterization of the PCB congeners to be handled, prioritization, capture and transport, containment and pre-treatment). In addition, the selection of the destruction technology should not only be guided by environmental performance (destruction efficiency/destruction and removal efficiency), cost-effectiveness and market availability, but also consideration of the ability to manage the disposal of by-products and residuals of destruction processes.
- c) Given the links to the development of the new green economy-based town of Boughezoul, where there is to be development of high-value services and technologies, bio-technologies, and research, this project would do well to seek synergies with the PCB and POPs treatment initiatives in the UNEP/GEF Zero-Emission New Town of Boughezoul, Medea project, ensuring that the full cadre of available guidance, whether from Stockholm, Basel or GEF, are taken into consideration in setting up ESM for PCBs/POPs. This will ensure that broad environmental performance, financial and market availability criteria are not the only ones involved in guiding selection of disposal technologies and strategies, and should aid in an outcome where there is also capacity to handle destruction residues and by-products, and that there is capacity to manage all the steps of the ESM system put in place. There would therefore be a beneficial cross-pollination between the projects.

<i>STAP advisory response</i>	<i>Brief explanation of advisory response and action proposed</i>
<b>1. Consent</b>	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.
<b>2. Minor</b>	STAP has identified specific scientific/technical suggestions or opportunities that should be discussed

<p><b>revision required.</b></p>	<p>with the proponent as early as possible during development of the project brief. One or more options that remain open to STAP include:</p> <ul style="list-style-type: none"> <li>(i) Opening a dialogue between STAP and the proponent to clarify issues</li> <li>(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</li> </ul> <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>
<p><b>3. Major revision required</b></p>	<p>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.</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>