

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)

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Consultant(s):

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

FULL SIZE PROJECT GEF TRUST FUND

GEF PROJECT ID: 4386

PROJECT DURATION : 4

COUNTRIES : Ukraine

PROJECT TITLE: Environmentally Sound Management and Final Disposal of Polychlorinated Biphenyls (PCBs)

GEF AGENCIES: UNIDO

OTHER EXECUTING PARTNERS: Ministry of Environment and Protection

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

The project seeks to establish an environmentally sound management (ESM) system for PCBs, improve compliance to PCB-related obligations under the Stockholm Convention (SC), and promote local use of non-combustion technologies in the disposal of all PCBs identified during the preliminary NIP Inventory. Activities focus, inter alia, on: (i) strengthening the capacity of related legal and administrative frameworks; creating a nation-wide feasibility plan for phase out of PCB equipment and wastes; assessing, facilitation of non-combustion technology transfer through the identification and establishment of appropriate PCB disposal technologies, with simultaneous identification of equipment and materials for decontamination and recycling; sound management and disposal of approx. 3000 tonnes PCB equipment and waste; a public information and information management scheme to accompany the ESM system; and creation of opportunities for female employment in laboratories.

Baseline was established through the country's NIP, which identified 10,935 tonnes of PCB-contaminated equipment (though the figure may be 1.5 to 3 times higher in reality), and indicated several priority areas for POPs management, namely (i) the need for new regulatory measures for POPs management; (ii) inventory, sound management and disposal of PCBs and PCB-containing equipment; (iii) upgrading of current lab capacity to international standards in POPs analysis; and (iv) raising of public awareness on health and environmental impacts of POPs.

STAP Comments:

The project approach appears to be quite comprehensive, though it would be good to highlight what role the national labs can play in monitoring PCBs. The NIP outlined an apparent gap in capacity to analyse POPs, and if there is to be an ESM system that operates post project, with attendant regulatory support, then there must be a way to measure PCB levels on equipment, in wastes, contaminated areas etc. It is not clear whether this gap is being satisfied through other funded activities, and represents a significant omission in an otherwise comprehensive document - and should be addressed in the full project document. It is difficult to see how ESM will continue post project if the government is unable to ensure the monitoring data necessary to enact or enforce regulatory measures to control PCB releases.

As a reminder, the STAP hopes that the eventual project document will also consider all of the elements that constitute environmentally sound disposal. The STAP Advisory document on POPs Disposal Technology in GEF Projects focuses on what exactly constitutes environmentally sound disposal of POPs, and what disposal technologies are best able to 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 BAT/BEP 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 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."

Therefore based on the aforementioned background:

- a) In developing the project document and determining disposal options, action should be taken to incorporate the Stockholm/Basel and GEF guidance on technology selection for POPs disposal and the overall development of the ESM system for PCBs. This would ensure that a comprehensive set of parameters be used to select technologies for GEF investment (e.g. environmental performance, ability to manage residuals and transformation products of the destruction and decontamination processes, full assessment of pre-treatment steps required and attendant associated risks, and required resources and capacities to manage them). Explicitly following of the aforementioned scientific guidelines would be desirable in the course of project development, implementation, and monitoring and evaluation. This would also ensure that the true costs of a technology are brought to light since pre-destruction steps (eg. characterization of the PCB congeners to be handled, prioritization, capture and transport, containment and pre-treatment) can carry their own significant resource and capacity burdens, and can often be the barrier to implementation of technologies in developing countries and CEITs. Definition of environmentally safe low POPs concentrations would also be clearer and kept consistent with best practices.
- b) The dangers of informal, repurposed use of POPs containing containers should be included in any targeted awareness in communities. There may be a large gender component to this (e.g. if women do water collection and other gathering of food etc using repurposed containers). But this may or may not be a problem in the Ukraine.
- c) The need for enhanced analytical laboratory capacity is mentioned as a need (as well as creating opportunities for female capacity development), but how this would interact with the project is not clear. What is the role of national laboratories in this project? STAP suggests close interaction of such efforts with this project (or within the project if finances allow) to ensure characterization and quantification of PCBs, and measuring environmental levels of PCBs before, during, and after operation. This is also critical to the monitoring of operator exposures, as mentioned in the risk mitigation section. RECETOX in Brno hosts the Stockholm Convention Regional centre for capacity building and transfer of technology in Central and Eastern European countries, and could be approached for advice and possible deployment of relatively cheap and proven passive samplers.
- d) The document is correct in noting that there is no contribution to Climate change from this activity, but ignores associated climate vulnerability risks and the role this can play in prioritising sites for action. 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.

e) There is one very apparent anomaly in the text: in the 3rd paragraph of section B.1, mention is made of a seemingly high disposal cost of 6-8\$/kg, while the 3rd paragraph of B.2 claims that introducing "local technologies" could result in a price drop "as low as" 6-8\$/kg. This needs attention.

<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>