

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: Ricardo Orlando Barra Rios
Consultant(s):

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

FULL-SIZED PROJECT	GEF TRUST FUND
GEF PROJECT ID:	9421
PROJECT DURATION:	5
COUNTRIES:	Regional (Kyrgyz Republic, Tajikistan)
PROJECT TITLE:	Demonstration of Non-thermal Treatment of DDT Wastes in Central Asia
GEF AGENCIES:	UNEP
OTHER EXECUTING PARTNERS:	Green Cross Switzerland, BRS Sec, UNEP IETC, FAO
GEF FOCAL AREA:	Chemicals and Waste

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. The overarching objective of this project is to treat at least 5,000 metric tons of DDT waste in Kyrgyz Republic and Tajikistan using non-thermal treatment technology. The project also aims to strengthen waste management policies and regulations in the countries and build capacity in the field of hazardous waste management.
2. A large number of DDT stockpiles and several contaminated sites exist in the region, as legacies of past activities. While some actions were undertaken to minimize the environmental and health impact of these sites, they still pose a significant hazard to humans and the environment and therefore require environmentally sound management.
3. Preliminary site assessments have been carried out to identify high-risk locations in both countries, and there already exists a reasonable understanding of the type of hazards and possible solutions to be implemented.
4. The project proponents have identified Supercritical Water Oxidation as the technology for waste and contaminated site treatment. This technology is well established scientifically and technically. However, its commercial application seems to be limited to highly industrialized countries because of the cost, as well as the parameters for effective operation of supercritical reactors including high-pressure conditions, volume limitations, as well as susceptibility to corrosion and salt precipitation. See, for example, Marrone 2013: <http://www.sciencedirect.com/science/article/pii/S0896844612003919>; Tester et al., 1993: <http://pubs.acs.org/doi/abs/10.1021/bk-1993-0518.ch003>; Veriansyah and Kim, 2007: http://www.jesc.ac.cn/jesc_en/ch/reader/create_pdf.aspx?file_no=2007190501; Vadillo et al., <http://pubs.acs.org/doi/abs/10.1021/ie400156c>).

5. It is therefore important that the effectiveness of Supercritical Water Oxidation for the targeted waste types is confirmed before commencing full-scale operation. The proponents have indicated that an optimization of operating conditions for the supercritical process would be carried out in the United States before the full-scale onsite operation. However, given the difference in environmental conditions between the United States and the region of implementation, and the fact that the exact content of the targeted waste is not yet confirmed, it will be advisable that the optimization is carried out at the location of the waste and after the waste content has been confirmed.

6. Further to Paragraph 4 and 5 above, there is a need for a contingency plan for an alternative remedial option, just in case the Supercritical Water Oxidation technology does not deliver the desired results during the trial stage.

7. A total 5,000 metric tons of DDT waste or contaminated site is expected to be disposed of through this project, which is the "critical mass of waste at which the Supercritical technology becomes economically feasible" according to the project document. It is, however, recognized that there is potential to dispose of more tons of hazardous waste through the project. STAP, therefore, advise that the project should proactively seek to maximise the opportunity and aim to increase the total disposed tonnage, to provide a greater value-for-money from the project.

<i>STAP advisory response</i>	<i>Brief explanation of advisory response and action proposed</i>
1. Concur	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.
2. Minor issues to be considered during project design	<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>
3. Major issues to be considered during project design	<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>