

# Scientific and Technical Advisory Panel

The Scientific and Technical Advisory Panel, administered by UNEP, advises the Global Environment Facility



## STAP Scientific and Technical screening of the Project Identification Form (PIF)

Date of screening: 09<sup>th</sup> February 2010

Screener: Lev Neretin

Panel member validation by: N.H. Ravindranath

### I. PIF Information

GEF PROJECT ID: 4144

COUNTRY(IES): BRAZIL

PROJECT TITLE: **PILOT PROJECT FORMETHANE MITIGATION AND RECOVERY FROM HYDROELECTRIC POWER RESERVOIRS**

GEF AGENCY(IES): IADB

OTHER EXECUTING PARTNER(S): FURNAS CENTRAIS ELÉTRICAS S/A

GEF FOCAL AREA (S): CLIMATE CHANGE

GEF-4 STRATEGIC PROGRAM(S): CC-SP3, CC-SP4, CC-SP6

NAME OF PARENT PROGRAM/UMBRELLA PROJECT (IF APPLICABLE): N/A

### II. STAP Advisory Response (see table below for explanation)

1. Based on this PIF screening, STAP's advisory response to the GEF Secretariat and GEF Agency(ies):

**Major revision**

### III. Further guidance from STAP

1. The project aims to promote adoption of methane mitigation and recovery technologies for Hydroelectric power reservoirs to reduce GHG emissions in Brazil. GHG emission from reservoirs is an important source of GHG emissions globally. The project involves research, development, testing the technologies, implementation of pilot projects and conducting feasibility studies. This is a complex project involving methane recovery from reservoirs and its use in power generation. This is an innovative project attempting to generate information, knowledge and data on a new technology. GEF should support such innovative projects generating new mitigating opportunities, however, it should be classed as Targeted Research to reflect the significant risks involved. For this reason Major revision is requested.
1. STAP considers that the project raises questions about eligibility, demonstrated global environmental benefits, maturity of the proposed technology and, finally, potential adverse environmental impacts. Accordingly STAP recommends that the project be reclassified as a Targeted Research project and that a TR Review Panel evaluates the potential risks and opportunities in the promotion of the apparently untested technological innovations proposed.
2. *Scientific issues:* In the meantime, from a science perspective, STAP understands that even background information on methane concentrations and its dynamics including emissions in selected reservoirs is lacking and that the proponents propose that this data be collected at the beginning of the project. The outcome of these research/monitoring activities would determine whether any global environmental benefits can be expected. Indeed there may be significant risk; methane harvesting from deep waters, assuming that the proposed technology works, may instead lead to increased emissions by destroying the integrity of the methanotrophic community at the interface, which is the main barrier preventing methane from reaching the surface in deep-water reservoirs. Alternatively a simpler intervention of technological improvements leading to water intake from surface rather than methane rich deep waters might reduce methane emissions into the atmosphere without compromising the integrity of the reservoir chemical balance.
3. *Technology transfer:* This project is more a technology transfer type of project, where technology feasibility studies along with pilot projects are conducted. This project surely may not qualify as aimed at "market development". The technology innovation chain includes; R & D, demonstration, pilot projects and dissemination or market development. This project falls largely in the first two phases namely; R & D and demonstration.

4. *Financial viability:* To be realistic, technological feasibility and financial viability of the technologies are yet to be established, even though the principles and processes involved in the technologies are well known. It may be premature to talk about cost-efficiency, return on investment and market development.
5. *Selection of reservoirs:* What criteria would be adopted for selecting the reservoirs and is it possible to stratify or classify the reservoirs based on Methane recovery potential (depth, age, presence of organic matter etc.)?
6. *Risk assessment:* Financial and market risks are very high and may not be relevant at the current stage, given the current status of the technology. Even the well known energy efficiency and renewable energy technologies face market and financial barriers. The aim of this project should be to generate information on the technical, financial, institutional risks and potential mitigation measures for the emerging technologies.
7. *Methodologies:* IPCC provides the methodology for GHG emission reduction measurements. The project could benefit from the IPCC methods.

<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 revision required.</b>	STAP has identified specific scientific/technical suggestions or opportunities that should be discussed with the proponent as early as possible during development of the project brief. One or more options that remain open to STAP include: <ol 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> </ol> 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.
<b>3. Major revision required</b>	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. 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.