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:	May 07, 2016
Screener:	Thomas Hammond
Panel member validation by:	Ralph E. Sims
Consultant(s):	

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

FULL SIZE PROJECT	**GEF TRUST FUND**
GEF PROJECT ID:	9218
PROJECT DURATION:	5
COUNTRIES:	Turkey
PROJECT TITLE:	Sustainable Use of Biomass to Assist the Development of Turkey's Economy Towards a Low-carbon Development Path
GEF AGENCIES:	UNIDO
OTHER EXECUTING PARTNERS:	Ministry of Food, Agriculture and Livestock MoFAL/TAGEM); Ministry of Energy and Natural Resources (MoENR)
GEF FOCAL AREA:	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. The aim is to use biomass resources for process heat in the less developed regions of the country (although the concept can be just as effective in more developed areas as exemplified by large scale bioenergy uptake in Sweden and other Scandinavian countries for both heat and power).
2. The biomass resources in Turkey have been identified and quantified. Utilizing green waste streams for biogas is commendable and well understood in many countries, for example Germany and Denmark where community scale, municipal scale and farm scale systems have been operating successfully for decades. Maintenance of the plant is critical so including training in this regard is good.
3. Capacity building is an important component as bioenergy is labor intensive compared with most other renewable energy systems. Where feasible, the co-generation of both electricity and useful heat (combined heat and power) should be encouraged to maximize the efficiency of the bioenergy conversion process.
4. The mitigation potential (section 1.5) is based on "initial assumptions" but it is not clear what these are to evaluate the figure quoted for the demonstration plants. Indirect emission reductions were based on GEF methodology so it is assumed that the direct emission calculations were too.
5. The risks are well outlined but there are two gaps in the proposal that should be addressed:

a. "Sustainable use of modern biomass will be promoted in the project; relevant standards and certification schemes will be applied where necessary". Although in the project title, the word "Sustainable" has not been defined in the proposal. Nor is it clear exactly what standards and certification schemes are to be used. The EU has spent much effort on ensuring any sources of biomass used for energy are produced in a sustainable way so much can be learned from their actions and policies. In addition, the Global Bioenergy Partnership (GBEP) has co-ordinated work in this area and produced a set of sustainability indicators that could be used in this project: http://www.globalbioenergy.org/

b. "Lack of a modern biomass supply chain" is considered a barrier but no discussion is evident on exactly how the biomass resources are to be delivered to the bioenergy conversion plant. There is good literature on this, some which shows inefficient methods of transport and storage can cost several times more than other methods (see for example Chapter 4 in http://www.amazon.com/The-Brilliance-Bioenergy-Business-

Practice/dp/190291628X#reader_190291628X), especially when relatively wet biomass is carted when, if to be combusted, it could first be left to dry naturally over a period. This transport and logistics aspect of biomass is often neglected when planning a bioenergy system and can be a costly omission.

STAP advisory response	*Brief explanation of advisory response and action proposed*
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	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: (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. 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.
3. Major issues to be considered during project design	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: (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. The GEF Secretariat may, based on this screening outcome, delay the proposal and refer the proposal back to the proponents with STAP's concerns. 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.