

# 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 08, 2017  
Screener: Sunday Leonard  
Panel member validation by: Ralph E. Sims  
Consultant(s):

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

| FULL-SIZED PROJECT        | GEF TRUST FUND                                                                                   |
|---------------------------|--------------------------------------------------------------------------------------------------|
| GEF PROJECT ID:           | 9367                                                                                             |
| PROJECT DURATION:         | 4                                                                                                |
| COUNTRIES:                | Bhutan                                                                                           |
| PROJECT TITLE:            | Bhutan Sustainable Low-emission Urban Transport Systems                                          |
| GEF AGENCIES:             | UNDP                                                                                             |
| OTHER EXECUTING PARTNERS: | Gross National Happiness Commission (GNHC) and Ministry of Information and Communications (MOIC) |
| 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):  
**Minor issues to be considered during project design**

### III. Further guidance from STAP

Policy support for low-carbon transport across all levels, developing an infrastructure roadmap, with guidelines for vehicle owners are the main aims of this GEF-funded project that will enhance activities already in place in Bhutan to reduce transport emissions.

Road transport is the target (Bhutan's highest GHG emitting sector) with no plans to include aviation or waterways. Car ownership is growing, with the usual problems of congestion, air pollution and high costs of imported fuels. The country's pledge to remain carbon neutral (hydro-power is exported) is under threat.

Improving public transport services is part of the strategy, including importing more efficient diesel buses, yet with a surplus of hydro power and hence a low emissions factor from power generation, electric buses should be preferred. Electric scooters, E-bicycles and E-rickshaws are also readily available with many manufacturers existing in S E Asia for over a decade. It is not clear why this proposal omits these relevant options and their many benefits, e.g. more affordable, easier parking, reduced traffic congestion, and employment created.

Policies to encourage the purchase of private or company-owned EVs are to be developed in order to overcome the current barriers as outlined. However substituting EVs for ICE vehicles will not reduce traffic congestion. Capacity building and public education are recognised as being important components for success as are the evolution of a supporting system, including recharging points and EV servicing and repair facilities.

A number of related projects already exist as outlined in the baseline table. Deployment of more EVs is being actively encouraged by the national government. GEF investment will largely target public transport and taxis. (EV taxis are becoming common elsewhere, e.g Amsterdam has Tesla vehicles in the EV fleet.)

It is good to note the government is upgrading walking and cycling facilities in Thimphu but it is not clear why this is not also a policy for other urban areas. The majority of journeys are probably less than 2-3 km.

190 kt CO<sub>2</sub>-eq is the claimed mitigation level resulting from the government's goal of reaching 375 EVs. It is not clear whether these vehicles will operate only as a result of the GEF investment, or whether, as a government target, they are within the baseline. Are the 375 EVs all assumed to be buses? If they displace diesel vehicles averaging 3.25km/l as stated (equating to around 30l/100km), then they cannot be cars or taxis but more likely to be inefficient older buses.

So it is not clear why the demonstration EVs used as taxis are not included in the calculation. How the \$/t CO<sub>2</sub>-eq was calculated is also unclear. If the total investment (GEF + co-financing) = ~\$18.5 M, then the 190 kt avoided equates to ~\$97/t CO<sub>2</sub>-eq which is high. Several tools for assessing GHG emission reductions from transport exist (For example: UNFCCC:CDM AM0031 Bus Rapid Transit; UNFCCC: CDM AM0031 Bus Rapid Transit; UNFCCC: CDM AMC0016 Mass Rapid Transit; UNFCCC: CDM ACMIII.U Cable Cars for Mass Rapid Transit; Clean Technology Fund Guidelines for Calculating GHG Benefits of CTF Investments in Transport Sector; Inter-American Development Bank). Was the GEF manual to assess transport emission used?

Overall the project has offered some standard solutions to reducing GHG emissions from transport in urban areas of Bhutan but it lacks innovative ideas and is without a vision for providing future sustainable mobility for citizens (and goods, though freight is not part of the proposal). The choice of mobility options for a journey by an individual depends on cost, convenience, comfort, safety and speed (See the Transport chapter in IPCC AR5 (2014) [http://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc\\_wg3\\_ar5\\_chapter8.pdf](http://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_chapter8.pdf)). This proposal could benefit from considering future transport options other than concentrating on electric vehicle substitution for ICE-powered taxis and buses.

In summary, the following is suggested to improve the project and increase the chances of maximizing the environmental benefits:

1. Consider several transport options including e-motorbikes, e-cycles, and e-rickshaws. Given the short distances involved, these are feasible options that can be implemented and that can help reduce greenhouse gas emissions, while also easing the challenge of traffic congestion and provide other developmental and social benefits.
2. Also, the options of walking and cycling infrastructure should be considered beyond Thimphu especially given the short distances involved. Taking action on improving this infrastructure would also provide feeders to connect with the main city bus lines.
3. While investment in EV taxis is good, it is encouraging that the project also seeks to invest in EV buses. This will ensure that the project contributes to lowering the current taxi-to-bus ratio in Bhutan, which is not environmentally- or people-friendly at the moment. The investment in EV buses when implemented along with the other options suggested above, could help move transportation toward mass transit with added climate and social benefits.
4. It is suggested that the emission reduction potential (avoided emissions expected) be recalculated using the GEF guidance document for transportation projects “[https://www.thegef.org/sites/default/files/publications/GEF\\_CalculatingGHGbenefits\\_webCD\\_1.pdf](https://www.thegef.org/sites/default/files/publications/GEF_CalculatingGHGbenefits_webCD_1.pdf)”

| <i>STAP advisory response</i>                                 | <i>Brief explanation of advisory response and action proposed</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1. Concur</b>                                              | 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.                                                                                                                             |
| <b>2. Minor issues to be considered during project design</b> | 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: <ul style="list-style-type: none"> <li>(i) Open a dialogue with STAP regarding the technical and/or scientific issues raised.</li> <li>(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.</li> </ul> |

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|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                               | 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 issues to be considered during project design</b> | <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> |