

GEF EO Terminal Evaluation Review Form

1. PROJECT DATA				
			Review date:	October 2006
GEF Project ID:	941		at endorsement (Million US\$)	at completion (Million US\$)
IA/EA Project ID:	764	GEF financing:	5.815	not in TE
Project Name:	Demonstration for Fuel Cell Bus (FCB) Commercialization in China, Part I	IA/EA own:		
Country:	China	Government:		
		Other*:		
		Total Cofinancing	10.116	not in TE
Operational Program:	11	Total Project Cost:	15.931	not in TE
IA:	UNDP	Dates		
Partners involved:	Ministry of Science and Technology	Work Program date		05/11/2001
		CEO Endorsement		09/13/2002
		Effectiveness/ Prodoc Signature (i.e. date project began)		11/28/2002 (JE) 03/27/2003 (TE)
		Closing Date	Proposed: 01/01/2003	Actual: Sep 2004? (PIR05)
Prepared by: Anna	Reviewed by: Siv	Duration between effectiveness date and original closing: 1 month (JE) Minus 3 months (TE)	Duration between effectiveness date and actual closing: 1 year 10 months (JE) 1 year 6 months (TE)	Difference between original and actual closing: 1 year 9 months
Author of TE: Roland Wong Yi Bao-lian		TE completion date: November 2004	TE submission date to GEF EO: 05/24/2006	Difference between TE completion and submission date: 1 year 8 months

* Other is referred to contributions mobilized for the project from other multilateral agencies, bilateral development cooperation agencies, NGOs, the private sector and beneficiaries.

2. SUMMARY OF PROJECT RATINGS

GEF EO Ratings for project impacts (if applicable), outcomes, project monitoring and evaluation, and quality of the terminal evaluation: Highly Satisfactory (HS), Satisfactory (S), Moderately Satisfactory (MS), Moderately Unsatisfactory (MU), Unsatisfactory (U), Highly Unsatisfactory (HU), not applicable (N/A) and unable to assess (U/A). GEF EO Ratings for the project sustainability: Highly likely (HL), likely (L), moderately likely (ML), moderately unlikely (MU), unlikely (U), highly unlikely (HU), not applicable (N/A), and unable to assess (U/A). Please refer to document "Ratings for the achievement of objectives, sustainability of outcomes and impacts, quality of terminal evaluation reports and project M&E systems" for further definitions of the ratings.

	Last PIR	IA Terminal Evaluation	Other IA evaluations if applicable (e.g. IEG)	GEF EO
2.1 Project outcomes	S	N/A	N/A	S
2.2 Project sustainability	N/A	N/A	N/A	L
2.3 Monitoring and evaluation	N/A	N/A	N/A	U/A
2.4 Quality of the	N/A	N/A	N/A	MS

evaluation report				
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Should this terminal evaluation report be considered a good practice? Why? No. The TE states "wherever possible guidelines as set in the GEF's "Monitoring and Evaluation Policies and Procedures" January 2002 were also followed. Despite this, IA ratings, assessments of the M&E system, and project costs are not included in the TE. Also the project has a second phase that has the same development and immediate objectives so progress as of November 2004 is reported and there is a sense that the project is far from being completed.

Is there a follow up issue mentioned in the TE such as corruption, reallocation of GEF funds, etc.? No.

3. PROJECT OBJECTIVES, EXPECTED AND ACTUAL OUTCOMES

3.1 Project Objectives

• **What are the Global Environmental Objectives? Any changes during implementation?** No.

To reduce GHG emissions and air pollution in the long term through widespread commercial introduction of fuel cell buses in urban areas of China

• **What are the Development Objectives? Any changes during implementation?** No.

- Determine the technical and commercial viability of fuel cell buses (FCBs) and the associated fuel cell systems
- Establish the necessary technical and operational, managerial and planning capacity to maximize the likelihood of long-term sustainable use of FCBs
- Create a national-level awareness of FCBs and their long-term potential and develop a strategy for pursuing that potential

3.2 Outcomes and Impacts

• **What were the major project outcomes and impacts as described in the TE?**

The main positive outcome of the project thus far according to the TE has been to create a wider awareness of FCBs and the use of hydrogen fuel. Awareness of sustainable transportation and clean vehicles for public transit has been increased. This is visible in interviews with the project staff, government officials, transport managers, technical experts and the city people.

The project has also established technical, operational, managerial and planning capacity within the bus companies, scientific and industrial communities, and national and municipal-level policy makers for use of FCBs through publication of documents, training, and study tours.

Notable points that mark the Part I achievements up to November 2004 are:

- Agreements are in place to procure only 3 FCBs. As a result, only 3 FCBs are to be delivered to Beijing with FCB procurement for Shanghai being deferred to Part II pending funding availability.
- Delivery of the three demonstration FCBs to Beijing in September 2005 is 10 months behind schedule. This delivery would mark the end of Part I.

4. GEF EVALUATION OFFICE ASSESSMENT

4.1 Outcomes

A Relevance

Rating: **S**

• **In retrospect, were the project's outcomes consistent with the focal areas/operational program strategies? Explain.**

The outcomes and outputs are consistent with the climate change focal area and the strategies of OP11 to reduce GHG emissions from the transport sector. Furthermore, according to the TE the FCB Project is very important to the Chinese government. The project responds to sustainable clean fuel and clean vehicle policies and has garnered support from the highest levels of central and municipal government in China. The presence of operational FCBs in China will likely stimulate and accelerate the development of improved designs for FCBs and other FC applications to transportation by the several academic institutes and private firms already involved in fuel cell vehicles (FCV) development.

B Effectiveness	Rating: MS
<ul style="list-style-type: none"> • Are the project outcomes as described in the TE commensurable with the expected outcomes (as described in the project document) and the problems the project was intended to address (i.e. original or modified project objectives)? 	
<p>According to the TE GEF and UNDP assistance on this project has been effective and instrumental in the building of partnerships, accumulation of knowledge and the procurement of the FCBs. This is marked by a signed contract with the Daimler Chrysler Company Limited, Germany (DC) to procure three FCBs at a reasonable price and an agreement from British Petroleum (BP) to contribute to construct a hydrogen refueling station in Beijing. It is doubtful if an FCB tender could have been done without the backing of GEF and UNDP; local institutions would not have had the capacity and financial backing to solicit bids from foreign suppliers.</p> <p>The TE lists outputs that have been produced, are delayed and those that cannot be delivered during part I. Part I may not be able to demonstrate the technical and commercial viability of FSBs and the associated fuel cell systems due to delays of the delivery of FCBs. (See section C below.)</p>	
C Efficiency (cost-effectiveness)	Rating: S
<ul style="list-style-type: none"> • Include an assessment of outcomes and impacts in relation to inputs, costs, and implementation times based on the following questions: Was the project cost – effective? How does the cost-time Vs. outcomes compare to other similar projects? Was the project implementation delayed due to any bureaucratic, administrative or political problems and did that affect cost-effectiveness? 	
<p>Considering the achievements of Part I to date, project efficiency has been very good due to good management according to the TE. The project team has demonstrated its diligence in executing project plans including meeting project reporting requirements, initiating vendor communication and study tours, developing system specifications, selecting system suppliers, formulating reporting guidelines, reaching agreements with FCB and refueling station suppliers and publishing a project newsletter.</p> <p>According to the TE the main concerns of the current progress of Part I involve the shortfall in the procurement of FCBs that only allow for a Beijing demonstration. This shortfall is primarily due to an overly optimistic estimate of FCB price reduction during the project design that did not materialize between March 2003 and the period of the FCBs tender in early 2004. It is unclear if different approaches would have improved project performance, and averted deferral or delays of certain outputs.</p> <p>According to the TE the delivery of Beijing FCBs will be delayed 10 months behind the Inception schedule of November 2004 to September 2005. And full operation of the Beijing re-fueling station is re-scheduled for July 2005, 10 months behind the Inception schedule but in concert with the arrival of the FCBs in September 2005. Shanghai FCBs will be delivered during Part II pending available funding (commensurate with the prices of available FCBs at the time of tendering) and GEF approval of Part II FCB funding. Full operation of the Shanghai's re-fueling station will materialize only upon delivery of FCBs to Shanghai during Part II.</p> <p>Slow progress was noted between March and June 2003 in part to the SARS outbreak that delayed many of the project activities.</p>	
D Impacts	
<ul style="list-style-type: none"> • Has the project achieved impacts or is it likely that outcomes will lead to the expected impacts? <p>The project has not achieved impact of reduce GHG emissions yet, but it could in Phase II. According to the TE the overall impact of a successful FCB demonstration in China is enormous considering China has the world's largest public transit sector, and is rapidly becoming the one of the world's largest consumers of fossil fuels. Furthermore, there is a very good opportunity to showcase FCBs and the impact of GEF funding during the 2008 Olympics.</p>	

4.2 Likelihood of sustainability. Using the following sustainability criteria, include an assessment of risks to sustainability of project outcomes and impacts based on the information presented in the TE.

A Financial resources	Rating: L
Financial resources will be provided under Phase II of the project. While it is possible that, according to the TE, the positive results of this project could be sustained without UNDP or international assistance, UNDP involvement provides added credibility and more exposure to positive project results. This also improves the likelihood that FCB commercialization will occur at an earlier date.	
B Socio political	Rating: L
<p>To support development of sustainable fuels, according to the TE, China's mid to long-term development plan to 2020 contains statements that the development of hydrogen fuel and clean vehicles will be encouraged and supported. More recently, policy makers have now targeted hydrogen commercialization for the 2010-2020 period. The next Five Year Plan (2006-2010) currently being formulated will contain specific plans to meet these commercialization goals.</p> <p>There is a lot of momentum built by this project given the importance that the Chinese government places on fuel cell development. The government would like to showcase FCBs during the 2008 Olympics.</p> <p>There is a risk that commercial vendors will fail to produce FCBs at satisfactory cost. The cost of FCBs has been more costly than anticipated resulting in only 3 FCBs procured for Beijing only.</p>	
C Institutional framework and governance	Rating: L
<p>According to the TE, the project has effectively built capacity within various Chinese academic and government agencies. This started soon after the arrival of the new CTA who introduced the project team to his extensive network of international industry contacts. This facilitated the undertaking of the study tours of potential equipment vendors for the FCBs and the refueling station, strengthening of system specifications, participating on the tendering process, and setting up information exchanges with other organizations and projects involved with FCB development. Direct beneficiaries of these capacity building activities included officers from the central and municipal government levels and their project partners from the participating universities.</p> <p>The building of partnerships between diverse groups of stakeholders has been a significant achievement and instrumental to project achievements to date. This includes partnerships between relevant Chinese government agencies and ministries, central and municipal governments, academic institutes and private sector firms. These partnerships have assisted to provide better focus in the accumulation of FCB knowledge and procurement of FCBs. There has also been good inter-ministerial dialogue on this project that involves a diverse range of issues from environmental improvement to energy issues and road safety.</p>	
D Environmental	Rating: N/A
The project has not achieved any environmental impact yet, but may in Phase II.	

Provide only ratings for the sustainability of outcomes based on the information in the TE:

A Financial resources	Rating: L
B Socio political	Rating: L
C Institutional framework and governance	Rating: L
D Environmental	Rating: N/A

4.3 Catalytic role

1. Production of a public good - The project has increased awareness of sustainable transportation, clean vehicles for public transit, FCBs, and the use of hydrogen fuel.
2. Demonstration - The project will demonstrate fuel cell bus technology in Beijing and during Phase II in Shanghai.
3. Replication - The China FCB project can take the global lead amongst other UNDP/GEF FCB

projects. In comparison to lessons learned from a project in a developed country, the successes and lessons from a project in a developing country such as China can be more relevant and effective.

4. Scaling up - Project activities have not lead to new policy decisions by the government.

4.4 Assessment of the project's monitoring and evaluation system based on the information in the TE

A. In retrospection, was the M&E plan at entry practicable and sufficient? (Sufficient and practical indicators were identified, timely baseline, targets were created, effective use of data collection, analysis systems including studies and reports, and practical organization and logistics in terms of what, who, when for the M&E activities) Rating: **U/A**

No information about the M&E plan is provided in the TE.

B. Did the project M&E system operate throughout the project? How was M&E information used during the project? Did it allow for tracking of progress towards projects objectives? Did the project provide proper training for parties responsible for M&E activities to ensure data will continue to be collected and used after project closure? Rating: **U/A**

No information about the M&E system is provided in the TE.

C. Was M&E sufficiently budgeted and was it properly funded during implementation? Rating: **U/A**

No information about the M&E budget is provided in the TE.

Can the project M&E system be considered a good practice? No. No information about the M&E plan is provided in the TE.

4.5 Lessons

Project lessons as described in the TE

What lessons mentioned in the TE that can be considered a good practice or approaches to avoid and could have application for other GEF projects?

- Strong support from all project participants is required for this project. This includes the GEF, UNDP, the Government of China, and participating academic institutions and private sector firms. Lack of support from any one these groups would have resulted in further project delays and even failure. Resources from GEF and UNDP have been instrumental in “building bridges” between interested groups in China and FCB expertise outside of China;
- Continual efforts are required to maintain trusting and effective working relationships between all project participants. This would include efforts to maintain continual dialogue and transparency between project participants on critical path activities such as the installation of the re-fueling station;
- The presence of a strong technical and administrative team will increase the likelihood of a successfully implemented project. This was notably evident during:
 - The complex but successful FCB procurement process with the involvement of the CTA, IPS and NPC, all of whom had backgrounds with FCBs and fuel cells. As well, there were strong administrative personnel in the PMO to manage the complex international FCB transactions;
 - PMO-managed activities such as the foreign study tours that were carefully prepared, organized and managed. This maximized the effectiveness of promoting technology and policy exchanges, and increased the chances of follow-up actions required to strengthen cooperation between Chinese and foreign organizations;
- Provide realistic goals when planning demonstrations of new technologies. An accurate

assessment of the FCB market and hydrogen refueling technologies will be required for future procurement. This would include assessment of different types of FCBs and refueling technologies, their costs and required lead times for delivery.

4.6 Quality of the evaluation report Provide a number rating 1-6 to each criteria based on: Highly Satisfactory = 6, Satisfactory = 5, Moderately Satisfactory = 4, Moderately Unsatisfactory = 3, Unsatisfactory = 2, and Highly Unsatisfactory = 1. Please refer to the “Criteria for the assessment of the quality of terminal evaluation reports” in the document “Ratings for the achievement of objectives, sustainability of outcomes and impacts, quality of terminal evaluation reports and project M&E systems” for further definitions of the ratings.

4.6.1 Comments on the summary of project ratings and terminal evaluation findings

In some cases the GEF Evaluation Office may have independent information collected for example, through a field visit or independent evaluators working for the Office. If additional relevant independent information has been collected that affect the ratings of this project, included in this section. This can include information that may affect the assessment and ratings of sustainability, outcomes, project M&E systems, etc.

None.

4.6.2 Quality of terminal evaluation report	Ratings
A. Does the report contain an assessment of relevant outcomes and impacts of the project and the achievement of the objectives? The organization of the TE is a bit unusual. The TE could put more emphasis on how implementation delays affect achievement of the objectives.	MS
B. Is the report internally consistent, is the evidence complete/convincing and are the IA ratings substantiated? There are no IA ratings.	S
C. Does the report properly assess project sustainability and /or a project exit strategy? Being a Phase I project sustainability depends on Phase II.	S
D. Are the lessons learned supported by the evidence presented and are they comprehensive? The lessons presented in the TE are for Phase II of the project and could have applicability to other FCB projects.	S
E. Does the report include the actual project costs (total and per activity) and actual co-financing used? No.	HU
F. Does the report present an assessment of project M&E systems? No.	HU

4.7 Is a technical assessment of the project impacts described in the TE recommended? Please place an "X" in the appropriate box and explain below.

Yes:

No: **X**

Explain: The TE contains many recommendations for the Government, UNDP, and GEF regarding project management, procurement and the affects of trends in FCB development for the Phase II of the project.

4.8 Sources of information for the preparation of the TE review in addition to the TE (if any)

Project document, PIR05.