Terminal Evaluation Review form, GEF Evaluation Office, APR 2014

1. Project Data

Summary project data	
GEF project ID	263
GEF Agency project ID	466
GEF Replenishment Phase	GEF-1
Lead GEF Agency (include all for joint projects)	UNDP
Project name	Energy Conservation and Pollution Control in Township and Village Enterprise Industries – Phase I
Country/Countries	China
Region	EAP
Focal area	Climate Change
Operational Program or Strategic Priorities/Objectives	OP-5: Removal of barriers to energy efficiency and energy conservation
Executing agencies involved	Ministry of Agriculture
NGOs/CBOs involvement	Secondary executing agencies
Private sector involvement	Through consultations
CEO Endorsement (FSP) /Approval date (MSP)	02/01/1995
Effectiveness date / project start	Early 1998
Expected date of project completion (at start)	Late 1998
Actual date of project completion	11/06/2009

Project Financing			
		At Endorsement (US $M)	**At Completion (US $M)**
Project Preparation Grant	GEF funding		
	Co-financing		
GEF Project Grant		1.000	1.000
Co-financing	IA own		
	Government		
	Other multi- /bi-laterals		

	Private sector		
	NGOs/CSOs		
Total GEF funding		1.000	1.000
Total Co-financing			
Total project funding (GEF grant(s) + co-financing)		1.000	1.000

Terminal evaluation/review information	
TE completion date	07/1999
TE submission date	07/1999
Author of TE	V. Raghuraman
TER completion date	11/23/2014
TER prepared by	Sean Nelson
TER peer review by (if GEF EO review)	Joshua Schneck

2. Summary of Project Ratings

Criteria	Final PIR	IA Terminal Evaluation	IA Evaluation Office Review	GEF EO Review
Project Outcomes	N/R	N/R	N/R	S
Sustainability of Outcomes	N/R	N/R	N/R	L
M&E Design	N/R	N/R	N/R	MU
M&E Implementation	N/R	N/R	N/R	U/A
Quality of Implementation	N/R	N/R	N/R	MS
Quality of Execution	N/R	N/R	N/R	S
Quality of the Terminal Evaluation Report	-	-	N/R	MU

3. Project Objectives

3.1 Global Environmental Objectives of the project:

As stated in the Project Document (PD), the project's GEO is to lower GHG emissions from Township and Village Enterprises (TVEs), though a suite of energy efficiency measures. At the time of the Project Document's writing, China contributed 10 percent of global CO2 emissions per year. Since China was largely rural at the time (81 percent of the population), TVEs were one of the main forms of industrial organization in rural China and TVEs were also experiencing a high level of annual growth, lowering GHG emissions from TVEs could contribute substantially to lower Chinese emissions overall. TVEs used older technology and used energy inputs inefficiently, usually not based on market prices. As a result, TVEs had much room for improvement. According the the TE, demonstration projects in the brick-making, coking, metal casting and cement sectors would displace 332,000 tons of CO2 over the whole project's 10-year lifespan.

3.2 Development Objectives of the project:

The main DO is to improve the energy efficiency of select TVEs through a combination of “improved technologies, innovation, maintenance techniques, technical transformation and staff training” (PD, p. 2). The chosen TVEs were to be from the brick-making, coking, metal casting and cement sectors since these sectors accounted for over half of all TVE CO2 emissions. The project will target between 3 to 5 TVEs.

The long-term DO is to improve energy conservation centers' capacities in China. This will make it easier to adapt the more successful approaches of this project to other TVEs. An action plan to promote investment in other TVEs will be written and distributed among potential investors.

The overall project will include the following 3 components. These components are meant to be completed sequentially. Component 1 was to be carried out during Phase I and Components 2 and 3 were to be carried out during Phase II per the addendum to the PD:

1) **TVE surveying:** Surveying TVEs in the brick-making, coking, metal casting and cement sectors, along with other energy-intensive and high-polluting sectors. This survey work will help decide which particular TVEs to be used as demonstration firms for this project.
2) **Pilot projects:** After choosing the demonstration TVEs, the project will implement the pilot projects. Project activities with cement and coking firms will focus on retrofitting existing equipment, while project activities with brick-making and casting firms will focus on new plant construction.
3) **Improved energy conservation center capacity**: The project will aim to improve the capacities of energy conservation centers in China. This includes creating training materials and programs. State-Owned Enterprises (SEOs) currently have energy conservation centers that will also be consulted for their potential to consult TVEs as well. The Chinese government and the project will work together to create a China TVE Energy Conservation and Pollution Control Center.

3.3 Were there any **changes** in the Global Environmental Objectives, Development Objectives, or other activities during implementation?

An addendum at the end of the PD that was not part of the original project design explicitly states that Components 2 and 3 were to be carried out during Phase II. Component 1 is part of Phase I. While the original project design included a Phase I and II, it did not explicitly state which components would be carried out during which phase, which the addendum clarified. The TE states that Phase II "has set the objective of increasing the utilization of energy efficient technologies in the four sub-sectors" (TE, p. 7). The TE analyzed here covers only Phase I activities. Phase I's proposed GEF funding was US$1 million, while Phase II's proposed GEF funding was US$7.36 million for a total of US$8.36 of GEF funding. This funding breakdown was part of the original PD design, though GEF funding approval for each phase was handled separately. According to the TER for Phase II, Phase II's actual funding, when finally approved in May 1999, was raised to US$7.99 million.

4. GEF EO assessment of Outcomes and Sustainability

Please refer to the GEF Terminal Evaluation Review Guidelines for detail on the criteria for ratings.

Relevance can receive either a Satisfactory or Unsatisfactory rating. For Effectiveness and Cost efficiency, a six point rating scale is used (Highly Satisfactory to Highly Unsatisfactory), or Unable to Assess. Sustainability ratings are assessed on a four-point scale: Likely=no or negligible risk; Moderately Likely=low risk; Moderately Unlikely=substantial risks; Unlikely=high risk. In assessing a Sustainability rating please note if, and to what degree, sustainability of project outcomes is threatened by financial, sociopolitical, institutional/governance, or environmental factors.

Please justify ratings in the space below each box.

4.1 **Relevance**	Rating: **Satisfactory**

The project is relevant to both the GEF and to China. For the GEF, project objectives are in-line with those of GEF Operational Program -5: Removal of barriers to energy efficiency and energy conservation. Since TVEs were both ubiquitous in rural China and highly inefficient, improving the energy efficiency of TVEs represented a good way of lowering China's GHG emissions. This project built off of the recently completed World Bank ESMAP/UNDP China Energy Efficiency and Pollution Control in Town and Village Enterprises (TVE) report.

In addition, the Chinese government was also making improving TVEs' environmental profile a priority at the time. Recent laws aiming to improve TVE environmental performance included the Water Pollution Control Law, the Regulations on Strengthening Environment Protection in Township and Village Enterprises, the Air Pollution Control Law and the Environment Protection Law of the People's Republic of China. In March 1994, the State Council had approved China's Agenda 21, which made sustainable development a priority.

4.2 **Effectiveness**	Rating: **Satisfactory**

The TE does not provide a rating for effectiveness. This TER assesses project effectiveness as satisfactory based on the evidence presented in the narrative of the TE.

Note: This project was originally only supposed to include work on Component 1, but work was also carried out that supports Component 3.. This project created a Project Brief for Phase II. The TE states that the project had 2 objectives: (1) Address barriers in TVE in commercializing energy efficiency and GHG reduction technologies; and (2) develop capacities to implement selected pilot projects to achieve the desired goals (TE, pp. 8-9). The TE does not address Phase I and II funding levels directly. However, the TE for Phase II states that GEF funding for Phase I remained at US$1 million.

Summary: The project identified sites where work could be undertaken during Phase II. The project also identified which relevant technologies were currently available in China, along with existing gaps and international best practices for promoting those technologies. Actually implementing these technologies in the field through pilot projects was left for the project's Phase II.

Progress is detailed further below along the project's objectives, defined in the PD:

1) TVE surveying **Satisfactory**

The project surveyed 76 potential TVE sites. It chose 8 of these for the project. In addition, the project also surveyed 80 Local Rural Energy and TVE Technical Service and Training Institutions and 14 Rural TVE Energy Technical Training and Service Centers. The project also created a portfolio of energy efficiency technologies that would be suitable of TVE implementation.

3) Improved energy conservation center capacity **Satisfactory**

The project analyzed the relevant institutional capacities of both TVE service and training institutes to see if they could handle the task of carrying out the pilot projects and then promoting relevant technologies beyond the pilot projects. The project also created a training program on Energy Auditing and Management, including training 30 Master Trainers. The TE notes that the project supported "preparation of a financially sustainable training plan to enhance TVE capability to undertake Energy Efficiency Programmes" (TE, p. 6). In addition, the project also supported study tours in the US and the UK to the Energy Research Institute (ERI) and the Agro-Environment Protection Institute (AEPI).

4.3 **Efficiency**	Rating: **Unable to Assess**

The TE notes that the work carried out on Components 1 and 3 were done efficiently on both a time and cost basis. However, the TE does not provide any details to back up these claims besides assertions. For instance, no actual numbers (differences between dates of expected and actual project completion, project vs. actual spending) are provided to back up these assertions.

In addition, reorganization of the Ministry of Agriculture (MOA) resulted in delays choosing nominees to participate in the international study tours.

4.4 **Sustainability**	Rating: **Likely**

The TE does not provide a rating for sustainability. This TER assesses project sustainability as likely based on the evidence presented in the narrative of the TE.

Summary: The project's financial sustainability was in doubt due to a lack of financing options. Policy issues may have also been a factor. Sustainability of project outcomes is further assessed along the following 4 risk dimensions:

Environmental: **Unable to Assess**

The TE includes no information on environmental risks to project sustainability.

Financial: **Likely**

Phase I's main results, such as the surveys of pilot project sites, international study tours and training, had already been completed and could not be undone due to a lack of additional funding. As a result, these results were not subject to financial sustainability threats.

Sociopolitical: **Unable to Assess**

The TE notes that policy is a barrier to project sustainability, but then fails to provide any actual details as to why policy would be a barrier. This may have been due to the Ministry of Agriculture's reorganization at the time.

Institutional: **Likely**

The project supported raising the capacity of TVEs and related training institutions, including creating training programs and training Master Trainers who could then go on to train others as well.

5. Processes and factors affecting attainment of project outcomes

5.1 Co-financing. To what extent was the reported co-financing essential to the achievement of GEF objectives? If there was a difference in the level of expected co-financing and actual co-financing, then what were the reasons for it? Did the extent of materialization of co-financing affect project's outcomes and/or sustainability? If so, in what ways and through what causal linkages?

The TE does not include detailed financial figures and does not mention any co-financing numbers. With this said, the project design had allocated all co-financing to Phase II. Phase I was to be financed solely with GEF support.

5.2 Project extensions and/or delays. If there were delays in project implementation and completion, then what were the reasons for it? Did the delay affect the project's outcomes and/or sustainability? If so, in what ways and through what causal linkages?

The TE sections discussing time management are often vague. TE states that the Ministry of Agriculture underwent a reorganization during the project that resulted in delays for choosing international study tour nominees.

5.3 Country ownership. Assess the extent to which country ownership has affected project outcomes and sustainability? Describe the ways in which it affected outcomes and sustainability, highlighting the causal links:

The TE notes that the Ministry of Agriculture provided "personnel, training, timely procurement and deployment of equipment such as computers and Energy Audit instruments" (TE, p. 13). Beyond this, the TE does not directly address the central government's level of country ownership beyond the Ministry of Agriculture's role as the executing agency.

6. Assessment of project's Monitoring and Evaluation system

Ratings are assessed on a six point scale: Highly Satisfactory=no shortcomings in this M&E component; Satisfactory=minor shortcomings in this M&E component; Moderately Satisfactory=moderate shortcomings in this M&E component; Moderately Unsatisfactory=significant shortcomings in this M&E component; Unsatisfactory=major shortcomings in this M&E component; Highly Unsatisfactory=there were no project M&E systems.

Please justify ratings in the space below each box.

6.1 **M&E Design at entry**	Rating: **Moderately Unsatisfactory**

The TE does not provide a rating for M&E Design. This TER rates M&E Design quality as moderately unsatisfactory based on the design of the M&E system detailed in the PD.

The M&E design had significant shortcomings. These include:

The indicators and goals in the PD are often vague. For instance, the PD states that a primary goal of Component 3 is that "training centers with fully equipped training facilities and materials will be organized or established to support the goals of the action plan" (PD, p. 4). However, the PD does not define what "fully equipped" means for this project, which makes measuring progress difficult. For this reason, the indicators overall cannot be considered SMART.The design for Component 1 mentions that the pilot site selection process would produce reports that would include action plans and identify barriers to adopting energy efficiency measures and how to overcome them. However, it does not specifically say how these reports would be evaluated for quality. The PD does dedicated US$30,000 to M&E activities. The PD does not have a section specifically dedicated to discussing the M&E process, so there is no clear timeline for submitting M&E documents like a Mid-Term Review (MTR) and PIRs. As a result, the PD does not explicitly state who was responsible for writing and submitting the MTR and PIRs or what these documents should address. The PD does include production, economic and emissions baseline data for each of the 4 TVE sectors covered in this project.

6.2 **M&E Implementation**	Rating: **Unable to Assess**

The TE does not rate M&E implementation or provide sufficient information to assess a rating here.

The TE does not mention if any MTR or PIRs were ever created. No M&E documents of any kind are mentioned beyond a Project Brief due October 1998, but the TE does not say what this Project Brief actually said. The TE's "Quality of Monitoring and Backstopping" section mention an internal meeting in September 1998 that "commented on the deviations from the original plan" (TE, p. 12). However, this contradicts earlier assertions in the TE that the project stuck closely to the project plan in the PD. The TE also states that the "the project was stand-alone and did not have the complementary support of other UN agencies or UNDP" when it came to monitoring (TE, p. 12). The Ministry of Agriculture may have handled the M&E process completely on its own, though this point is not perfectly clear in the TE.

7. Assessment of project implementation and execution

Quality of Implementation includes the quality of project design, as well as the quality of supervision and assistance provided by implementing agency(s) to execution agencies throughout project implementation. Quality of Execution covers the effectiveness of the executing agency(s) in performing its roles and responsibilities. In both instances, the focus is upon factors that are largely within the control of the respective implementing and executing agency(s). A six point rating scale is used (Highly Satisfactory to Highly Unsatisfactory), or Unable to Assess.

Please justify ratings in the space below each box.

7.1 **Quality of Project Implementation**	Rating: **Moderately Satisfactory**

The TE does not provide a rating for project implementation. This TER assesses project implementation as moderately satisfactory based on the evidence presented in the TE narrative.

According to the TE, the project was largely well-designed with a strong understanding of Chinese environmental regulations and legislation, along with a thorough understanding of the role TVEs played in China's economy and environmental footprint. At the same time, TE states that the project design in retrospect should have more strongly emphasized engaging with potential financiers over focusing so heavily on technology. Other design shortcomings include weaknesses in the M&E design, in terms of indicators and processes.. It is also unclear how thorough a job of M&E implementation was undertaken during Phase I.

7.2 **Quality of Project Execution**	Rating: **Satisfactory**

The TE does not provide a rating for project execution. This TER assesses project execution as satisfactory based on the evidence presented in the narrative of the TE.

The Ministry of Agriculture undertook work on Component 1, which was the focus of this project. This work appears to have been thorough, though the TE includes insufficient information to assess if Component 1 was completed efficiently and on time. In addition, it also started work on Component 3, which originally was planned for Phase II. The TE does not directly state why some work on Component 3 was carried out during Phase I nor does it discuss whose decision it was to do so. This means that the project did work beyond Phase I, which raised capacities higher for Phase II than initially planned. This fact is particularly meaningful considering that the Ministry of Agriculture underwent a reorganization during Phase I, though this did delay choosing nominees for the international study tours.

8. Assessment of Project Impacts

Note - In instances where information on any impact related topic is not provided in the terminal evaluations, the reviewer should indicate in the relevant sections below that this is indeed the case and identify the information gaps. When providing information on topics related to impact, please cite the page number of the terminal evaluation from where the information is sourced.

8.1 Environmental Change. Describe the changes in environmental stress and environmental status that occurred by the end of the project. Include both quantitative and qualitative changes documented,

sources of information for these changes, and how project activities contributed to or hindered these changes. Also include how contextual factors have contributed to or hindered these changes.

The TE does not note any environmental changes due to the project. Activities that would likely have an environmental impact were left until Phase II.

8.2 Socioeconomic change. Describe any changes in human well-being (income, education, health, community relationships, etc.) that occurred by the end of the project. Include both quantitative and qualitative changes documented, sources of information for these changes, and how project activities contributed to or hindered these changes. Also include how contextual factors have contributed to or hindered these changes.

The TE does not note any socioeconomic changes due to the project so far. Activities that would likely have a socioeconomic impact were left until Phase II.

8.3 Capacity and governance changes. Describe notable changes in capacities and governance that can lead to large-scale action (both mass and legislative) bringing about positive environmental change. "Capacities" include awareness, knowledge, skills, infrastructure, and environmental monitoring systems, among others. "Governance" refers to decision-making processes, structures and systems, including access to and use of information, and thus would include laws, administrative bodies, trust-building and conflict resolution processes, information-sharing systems, etc. Indicate how project activities contributed to/ hindered these changes, as well as how contextual factors have influenced these changes.

a) Capacities

The project created a pilot training program. It also trained 30 Master Trainers to carry out this training program. In addition, the project created a portfolio of possible energy efficiency technologies and international best practices for TVEs to implement during Phase II (TE, p. 13). The project also sponsored study tours and fellowships to the Energy Research Institute (ERI) and Agro-Environment Protection Institute (AEPI) in the US and the UK (TE, p. 6).

b) Governance

Through the training program and through undertaking Phase I, government officials gained an improved understanding of the barriers to energy efficiency technology implementation and how to overcome them (TE, p. 6).

8.4 Unintended impacts. Describe any impacts not targeted by the project, whether positive or negative, affecting either ecological or social aspects. Indicate the factors that contributed to these unintended impacts occurring.

The TE does not note any unintended impacts due to the project.

8.5 Adoption of GEF initiatives at scale. Identify any initiatives (e.g. technologies, approaches, financing instruments, implementing bodies, legal frameworks, information systems) that have been mainstreamed, replicated and/or scaled up by government and other stakeholders by project end. Include the extent to which this broader adoption has taken place, e.g. if plans and resources have been established but no actual adoption has taken place, or if market change and large-scale environmental benefits have begun to occur. Indicate how project activities and other contextual factors contributed to these taking place. If broader adoption has not taken place as expected, indicate which factors (both project-related and contextual) have hindered this from happening.

The TE does not note any GEF initiatives taken to scale. These were to be undertaken in Phase II once the pilot projects were actually executed. Phase I did identify 8 host TVE sites for Phase II pilot projects (TE, p. 13).

9. Lessons and recommendations

9.1 Briefly describe the key lessons, good practices, or approaches mentioned in the terminal evaluation report that could have application for other GEF projects.

The following are drawn from the "Lessons Learned" section of the TE:

- The TE claims that this project's "strategy of identifying barriers and barrier removal strategy are unique" (TE, p. 19). Other projects should emulate this.
- This project has been successful because it engaged TVEs on the grassroots level.
- Not only will implementing Phase II improve quality of life and the TVEs' carbon footprint, but it will also make the TVEs more economically efficient, which will improve the Chinese rural economy.
- When writing the PD for Phase II, the design should shift focus away from an overemphasis on technology towards an emphasis on engaging financial institutions and making sure projects are financially and economically viable.

9.2 Briefly describe the recommendations given in the terminal evaluation.

The following are drawn from the "Recommendations" section of the TE:

- The Ministry of Agriculture and the United Nations Industrial Development Organization (UNIDO) have an opportunity to coordinate among institutions with the ability to remove financial and logistical barriers to TVE adoption of energy efficiency technologies.
- The project should engage the parallel EU project that was helping State-Owned Enterprises (SOE) to embrace energy conservation. Their experience could help inform Phase II of this project.

10. Quality of the Terminal Evaluation Report

A six point rating scale is used for each sub-criteria and overall rating of the terminal evaluation report (Highly Satisfactory to Highly Unsatisfactory)

Criteria	GEF EO comments	Rating
To what extent does the report contain an assessment of relevant outcomes and impacts of the project and the achievement of the objectives?	The TE does describe several activities undertaken for Components 1 and 3. However, the TE's organization is often convoluted. When the TE brings up various Immediate Objectives, it only refers to them by number without describing the objective. This makes it difficult to tell if it is following the same outline as the PD. It is often unclear from the language whether the TE means a certain action was taken or that a certain action was supposed to be taken. The TE is often poorly worded with bad grammar and missing punctuation that obscures the author's intent. It is clear that the project ran into execution problems, but the TE obscures this point rather than adequately explaining what happened.	**MU**
To what extent is the report internally consistent, the evidence presented complete and convincing, and ratings well substantiated?	The results matrix for Immediate Objective 1 is incoherent and difficult to read. The TE's sections on project outcomes often consist of repeating different outlines that are vague on details. Instead, the TE spends much space discussing differences between software packages instead of clearly explaining core issues.	**MU**
To what extent does the report properly assess project sustainability and/or project exit strategy?	The TE only properly addresses financial sustainability risks. It mentions that policy was also a risk, but provided no details to back up this assertion. The TE does not address environmental or institutional risks directly.	**MU**
To what extent are the lessons learned supported by the evidence presented and are they comprehensive?	The lessons learned appear evidence-based, but they are not comprehensive. Some of them just re-state the whole point of the project first mentioned in the PD. The lessons learned are very general. For instance, there is no discussion of differences between visited TVE sites that could help inform future TVE projects.	**MU**
Does the report include the actual project costs (total and per activity) and actual co-financing used?	The TE does not include any financial figures. It does not explain why further financing was needed when the GEF and the Chinese government had originally pledged to finance the pilot projects.	**U**
Assess the quality of the report's evaluation of project M&E systems:	The TE does not directly address the M&E system.	**U**
Overall TE Rating		**MU**

Overall TE rating: (0.3 * (3+3)) + (0.1 * (3+3+2+2)) = 1.8 + 1.0 = 2.8 = Moderately Unsatisfactory

11. Note any additional sources of information used in the preparation of the terminal evaluation report (excluding PIRs, TEs, and PADs).

N/A