



United Nations Environment Programme

**Terminal Evaluation of
China Rural Energy Enterprise Development
(CREED)**

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Final Report

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Disclaimer:

The views expressed in this report are those of the evaluator alone and do not necessarily reflect the views or policies of UNEP, or of any individual or organization consulted.

Acronyms and Abbreviations

BD-GH	Biogas Digester – Greenhouse
CBD	Convention on Biological Diversity
CC-IG	Consumer Credit - Income Generation (renamed in 10/2005 as CREED GreenVillage Credit or GVC Project)
CESI	Clean Energy Services Initiative
CREED	China Rural Energy Enterprises Development
DTIE	Department of Technology, Industry and Energy (UNEP)
E+Co	Energy through Enterprise (not-for-profit organization)
EDS	Enterprise Development Services
EDZ	Economic Development Zone
FES	Fuel-efficient Stoves
GVC	GreenVillage Credit
GVDC	GreenVillage Development Center
MHG	Micro hydropower Generator
NGO	Non-Governmental Organisation
PCMU	Project Coordination and Management Unit
RCC	Rural Credit Cooperative
ROtI	Review of Outcomes to Impacts
SWH	Solar Water Heater
TNC	The Nature Conservancy
UNEP	United Nations Development Programme
UNF	United Nations Foundation
UNFIP	United Nations Foundation Inc. Projects

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I. EXECUTIVE SUMMARY

1. The China Rural Energy Enterprise Development (CREED) project was implemented in Northwest Yunnan region under the overall management of UNEP's Division of Technology, Industry and Economics (DTIE) and with the support of the Yunnan representative office of The Nature Conservancy (TNC) and Energy through Enterprise (E+Co) China. The project's overall objective was to reduce the fuel wood consumption by the rural poor, leading to improvement in human health and reduced pressure on local forests.
2. TNC was responsible for the Consumer Credit and Income Generation (CC-IG) component which involved providing local households with credit to purchase efficient renewable energy devices, and additionally a loan for initiating activities that led to generation of sufficient income to repay the loans. On the other hand, E+Co managed the Clean Energy Service Initiatives (CESI) that involved providing support to small energy enterprises through a combination of enterprise development services and "seed capital" so that they could widen their business and deliver improved modern energy services to under-served areas of Western China.
3. This report is the outcome of a terminal evaluation carried out between February and July 2010 to examine the contribution of the CREED project towards the achievement of Expected Accomplishments and the extent, and magnitude of any project impacts to date. The evaluation also focused on the following main questions:
 - (a) Did the project establish commercially viable enterprises offering a variety of energy services to rural communities?
 - (b) To what extent did the project articulate financial options for support to the clean energy business sector?
 - (c) To what extent has the government actively supported approaches to meeting rural energy needs that rely on a combination of private sector delivery of sustainable rural energy services and extension of clean energy-related consumer credit to rural communities?
 - (d) Has the project contributed to reduction of rural poor consumption of firewood and thereby realized health improvement while reducing pressure on local forests?
4. The evaluation was conducted in-depth starting with desk review of project documents followed by a short field visit to interview key project personnel, intended beneficiaries of project outputs and other stakeholders involved in the project using a participatory approach. Based on the data available and the discussions held, the evaluator developed details of the project's "impact pathways" and conducted the Review of Outcome to impacts or "ROtI" analysis (see Annex 5 for details) which led to the following conclusions.
5. Considering the fact that the project was practically split at an early stage and the supporting partners decided to part ways and take up activities independently, the project has achieved much of the programmed output, both in quantity and quality. In spite of the limited resources and means available to the project, the initial delay incurred due to a change of view of the joint enterprise development service (EDS) delivery approach, and country-specific

- policy and investment constraints, the outputs have been delivered, though with some reasonable delays.
6. The CREED project can therefore be considered as exemplary in showcasing a sustainable model of financing projects that have multiple objectives of alleviating poverty, providing income generating opportunities to poor rural households, accelerating the adoption of renewable energy, improving human health and protecting the environment. It has also demonstrated how small and fledgling private enterprises can be nurtured, guided and financially supported so that they can develop a new vision to widen the sphere of their alternative energy businesses, with a specific focus on catering to the rural end-users.
 7. While the project has achieved most of the expected outputs outlined in the logframe, there are still some hurdles to be overcome in order for the project to reach its ultimate goal. In terms of attainment of objectives and planned results, the project has shown its relevance and can be considered as efficient. However, there is little likelihood of impact achievement in the absence of some impact drivers and assumptions that have been identified in the “ROtI” analysis (see Annex 5 for details).
 8. In spite of the liberalization in various sectors of the economy, Chinese regulations for foreign investments are still very restrictive and complex. Chinese government has a strong policy for renewable energy development for the rural population and large subsidies are provided to State-owned enterprises for poverty alleviation purposes, thus leaving very little scope for small private players in the off-grid clean energy businesses. Moreover, it is relatively difficult to identify small enterprises which have transparent business practices. There is a need for government policies to become more conducive to market driven business strategies and extend support to smaller private enterprises. On the other hand, enterprises need to adopt more accountable and transparent business practices to be eligible for business development support. These two factors will help the Government to move away from subsidy to State-owned companies and adopt policy to improve professionalism among private players interested in renewable energy technology and services.
 9. While local government organizations have learnt considerably by participating in the project and appreciated the positive benefits, they are unlikely to change the existing practices unless the central Government formulates policy to avoid duplication of efforts and create greater synergy among the various government sponsored schemes such as poverty alleviation, promotion of alternative energy and environmental protection. Local government departments can then interact closely with the network of Rural Credit Cooperatives to restructure the existing credits from line ministries and adopt the CREED CC-IG model to achieve the ultimate goals more sustainably.
 10. The central Government’s annual subsidies now allocated separately for poverty alleviation, renewable energy promotion and deforestation programs implemented without any coordination can then be channeled to reach greater number of beneficiaries by adopting the CREED model because much of the funds allocated as consumer credit can be recovered over a period of time to serve as a revolving fund for catering to a much greater number of future beneficiaries.

11. The successful achievement of the above intermediate states is a necessary condition for the ultimate success of the project that is aimed at helping the rural households depend less on fire wood, thereby improving their health and reducing the pressure on local forests.
12. Lastly, it is imperative to put in place a monitoring mechanism to assess the effectiveness of the program in improving the quality of life of the rural population and reducing the use of fuel wood as these are important parameters to gauge the success of the overall program.
13. The lessons that can be learnt from the project have been listed as:
 - a. Need for engaging in policy dialogue with relevant stakeholders to ensure larger impacts;
 - b. Importance of formal/official involvement of national/local institutional stakeholders as partners right from the project formulation stage;
 - c. More rigorous criteria for the choice of supporting partners and need for adopting project goals to match with the reality;
 - d. Setting realistic targets and time frame for project implementation;
 - e. Drafting contractual framework that prevent conflicts of interests;
 - f. Greater involvement of the implementing agency throughout and beyond the project duration; and
 - g. Include gender disaggregated data on the achievement of outcomes in project monitoring.
14. Specific recommendations for UNEP have been made to ensure that the project achieves its ultimate impact:
 - a. Conduct further research and documentation of the CREED model in order to capitalize the experience better and to widely disseminate in other developing countries through various existing channels of the different UN agencies at the national and regional levels;
 - b. Strengthen policy dialogue with national stakeholders who support the various development and environment protection programs in isolation so that a consensus could be built to phase out the costly and unsustainable subsidy-based support to technology dissemination in favor of the more sustainable, inclusive and efficient CC-IG approach;
 - c. Similar to the CC-IG Continuation and Transition Agreement signed between UNEP and TNC, sign an agreement with E+Co to allow it to retain the remaining balance of the CESI funds provided that such funds shall be used for alternative energy projects that promote alternative energy enterprises development in a manner consistent with CREED objectives and E+Co's mission.

II. INTRODUCTION AND BACKGROUND

15. While there are alternatives to the current practice of inefficient burning of large quantities of wood, the major challenge for the Chinese Government has been to adopt sustainable models of providing technologies such as efficient stoves, biogas units, solar water heaters, etc. to the rural population who could afford their use through enhanced livelihood generation activities. The government funding allocated for this purpose in the past has been mostly used to subsidize clean energy equipment, benefiting a limited number of the rural population, but leaving out either the poorest who could not even afford such subsidized equipment or those living in remote areas and requiring higher implementation costs. Moreover, considering the fact that such clean energy technologies came with a high first-cost, the rural population could not afford to replace them at the end of the product life.
16. The China Rural Energy Enterprise Development (CREED) project was formulated to address the above concerns by proposing a more sustainable model of promoting access to clean energy among low-income groups in the Northwest part of Yunnan and neighboring areas in Western China. The project was aimed at contributing to the environmentally sound development of Western China by improving the patterns of rural energy use, reducing greenhouse emissions, and stemming biodiversity loss from deforestation associated with fuel wood gathering. The ultimate goal was to convince Chinese institutions to internalize the project approach to improved/alternative energy use in rural and peri-urban areas, combining private sector provision of modern equipment and services with micro-finance schemes directed at end-users.
17. The project was jointly implemented by the Nature Conservancy (TNC), Yunnan Representative Office, and E+CO China under the overall management of UNEP's Division of Technology, Industry and Economics (DTIE). The project provided enterprise development services as well as seed financing for income generation activities. TNC was responsible for managing the Green Village Credit (GVC) initiative that involved providing local villagers with household credit to purchase better quality sustainable energy (energy-efficient and renewable energy) systems, and additionally, a loan for initiating income generating activities that would lead to the generation of sufficient income for repaying the loans. On the other hand, E+Co was expected to manage the Clean Energy Services Initiative (CESI) that involved providing support to enterprises through a combination of enterprise development services and "seed capital", in order to assist them in delivering improved energy services to under-served areas of Western China.
18. The expected outcomes of the project included the following:
 - a. Commercially viable business enterprises offering a variety of energy services to rural communities;
 - b. Financial support to the clean energy business sector coming from local, national and international financial institutions;
 - c. Government actively supporting approaches to meeting rural energy needs that rely on a combination of private sector delivery of sustainable rural energy services and extension of clean energy-related consumer credit to rural communities;
 - d. Rural poor consumption of firewood reduced and thereby health improvement realized and pressure on local forests reduced.
19. The initial duration of the project was for 34 months: from July 2003 to April 2006 which was later changed to run from February 2004 to December 2006. The total overall budget of the

CREED project at its inception was US\$12,311,000, including US\$ 1,411,000 from the UNF, grants of US\$500,000 from TNC and US\$200,000 from W. Alton Jones Foundation through the UNF, US\$100,000 in-kind contribution of UNEP, US\$100,000 co-investment of E+Co and US\$10,000,000 co-financing CREED sought to leverage through enterprise investments and the creation of specialized funds within the broader West China context.

20. At the initial stage, project implementation was delayed due to temporary suspension of activities because of the change of view of TNC regarding the joint enterprise development service (EDS) delivery approach through the creation of local entity. A meeting was convened by UNEP for all partners (TNC, E+Co, UNEP and donors including UNF/UNFIP and Blue Moon Foundation) in September 2004 to ensure smooth execution of the project. Under a new and revised structure, E+Co was entrusted with the task of implementing EDS (with a modified objective of creating and expanding small and medium sized energy enterprises and enterprises promoting large scale energy projects in the broader West China region) whereas TNC led the Consumer Credit and Income Generation (CC-IG) activities in close cooperation with the local financial institutions. The project document was accordingly revised and a new implementation strategy was proposed with a revised work plan and time table, extending the project duration by 6 months to end by June 2007. The project was further reviewed in 2007 and taking into consideration the time needed to complete both EDS and CC-IG activities, the duration was further extended to finally end in April 2008.
21. Prior to the implementation of the main activities, the CREED project carried out a preparatory phase that included identifying and evaluating past initiatives, conducting business “concept exposure” workshops for stakeholders, identifying income generation opportunities linked to renewable energy applications, consulting local financial institutions and government agencies, conducting feasibility assessment regarding investment in enterprises and consumer credit – income generating opportunities, determining how project funds could best be used to leverage other sources of micro-finance, etc. This preliminary phase led to the preparation and finalization of the detailed full project work-plan.
22. The different activities that were carried out in the full project can be grouped in the following 4 components with the timeline as indicated in brackets:
 - a. Capacity building: developing capacity of CREED team based in Yunnan, developing skills and procedures to convert ideas into reality, organizing and conducting workshops for stakeholders, working with government agencies for project implementation in targeted areas, and providing technical support and information regarding best practices on alternative energy options and income generating opportunities (for CC-IG: months 11-40, and for EDS: months 11-35).
 - b. Enterprise development: translating “REED Finance Professional Toolkit” and adapting it to the Chinese context, Implementing EDS and investment review process, providing EDS to selected entrepreneurs, seed capital to rural energy enterprises and growth capital to enterprises and post-investment services to help investee companies grow and creating efficient operational and co-investment procedures and structures for the CREED Seed Capital (for EDS: months 14-40).
 - c. Consumer credit, micro enterprise and income generation: Implementing operational procedures, creating new or expanding existing partners, securing additional financing, and providing on-going support, monitoring, evaluation and asset management (for CC-IG: months 11 to 40).
 - d. Communication, dissemination and outreach: Preparing CREED communication strategy for local, national and international audiences, sharing CREED experience with local and national governments, UN and donor agencies, development agencies

and foundations, publishing articles on the CREED project both for national and international audiences, presenting CREED programme and projects at international meetings, and preparing/disseminating project status reports (for all: months 11-40).

23. A CREED Management and Investment Committee was formed which consisted of one representative from each of the following organizations: UNEP, TNC and E+Co. Monthly/quarterly progress reports were prepared by TNC and E+Co to provide an update on the progress made in the execution of the project. UNEP undertook field missions in order to evaluate the progress of the project, provide advice and guidance to the project partners and suggest suitable measures to overcome the constraints faced during the project execution. Both TNC and E+Co submitted to UNEP half-yearly progress reports and a project terminal report upon the completion of the project, following a standard format.

III. SCOPE, OBJECTIVE AND METHOD

24. The objective of the present evaluation was to assess the extent to which the goals and expected objectives of the CREED project have been achieved in an efficient and effective manner, and to provide recommendations and lessons from program implementation to help replicate or design new projects in the future. **Annex 1** outlines the terms of reference for the terminal evaluation.
25. The present terminal evaluation was undertaken in order to examine the contribution of the CREED project towards the achievement of Expected Accomplishments and the extent, and magnitude of any project impact almost 2 years after the official completion of the project. The evaluator attempted to determine the likelihood of future impacts, assess project performance and the implementation of planned project activities/outputs against actual results. For this, the evaluator undertook a one-week mission to the Yunnan province from 7 to 14 March 2010 and met with both TNC and E+Co staffs who were actively involved in the implementation of the CREED project. The evaluator also met a number of project beneficiaries and had exchanges of ideas and opinions about the effectiveness of the project activities and their perception of the overall impact of the project. The detailed program of the mission, the sites visited, and the persons met can be found in **Annex 2**.
26. The main focus of the evaluation was to find answer to the following main questions:
 - a. Did the project establish commercially viable enterprises offering a variety of energy services to rural communities?
 - b. To what extent did the project articulate financial options for support to the clean energy business sector?
 - c. To what extent has the government actively supported approaches to meeting rural energy needs that rely on a combination of private sector delivery of sustainable rural energy services and extension of clean energy-related consumer credit to rural communities?
 - d. Has the project contributed to reduction of rural poor consumption of firewood and thereby realized health improvement while reducing pressure on local forests?
27. The terminal evaluation was conducted using a participatory mixed-method approach. The UNEP Programme/Project Manager, key representatives of the executive agencies and other relevant staff were kept informed and consulted throughout the evaluation. The findings of the evaluation are based on multiple approaches:
 - a. Desk review of project documents including, but not limited to:
 - i. The project documents, outputs, monitoring reports (such as progress and financial reports to UNEP)
 - ii. Other project-related materials produced by the project staff or partners
 - iii. Relevant material published on the project web-site
 - b. Interviews with project management and technical support staff
 - c. E-mail questionnaire to TNC and face-to-face interviews were conducted with the staff of TNC and E+Co China and Bangkok office, two enterprises who benefited from CESI funds, CC-IG funds beneficiaries in selected villages, and the manager of Lijiang RCC (the whole list is presented in Annex 2).
 - d. Face-to-face and telephonic interview with UNEP Project/Program Manager based in Paris and telephonic interview with staff in UNEP's Evaluation Office,

- e. Field visit to meet key project personnel, collaborators and target audiences in Northwest Yunnan area.
28. The success of project implementation was assessed and rated using twelve categories, namely: *attainment of objectives and planned results, sustainability, catalytic role and replication, stakeholder participation/public awareness, country ownership, achievement of outputs and activities, preparation and readiness, assessment monitoring and evaluation systems, implementation approach, financial planning, UNEP supervision, and complimentarity with UNEP medium term strategy and program of work.*
29. As the terminal evaluation was conducted almost 2 years after the official completion of the project, there were changes in the project staff of TNC. The former Director of the TNC component of the CREED project was contacted and was kind enough to meet and share his experiences and views with the evaluator during the field mission.

IV. PROJECT PERFORMANCE AND IMPACT

A. ATTAINMENT OF OBJECTIVES AND PLANNED RESULTS

Effectiveness: Evaluate the **overall likelihood of impact achievement**, taking into account the “Achievement Indicators”, the achievement of outcomes and the progress made towards impacts.

30. The overall objective of the project, as defined in the logical framework of the project document, was to “contribute to the environmentally sound development of Western China by improving patterns of rural energy use, reducing greenhouse gas emissions, and stemming biodiversity loss from deforestation associated with firewood gathering”. To deliver the intended impact, activities were undertaken to achieve 4 specific outcomes (refer to paragraph 18). These have been achieved to a great extent in consonance with the resources and means available to the project and taking into account the policy and investment constraints in China.
31. The initial delay faced in the implementation of the project can be attributed to the differences of opinion and understanding between the two project implementing partners. By the time the differences and issues were sorted out, the project was divided into two different components with no actual linkage between them. As a result, while each of the sub-project components was implemented in a diligent and efficient manner, the overall outcome fell short of the initial targets. For example, the rural energy enterprise development component was initially conceived to support enterprises in the project area through business planning and investment so that they were able to support sales and services of clean energy technologies that were to be promoted through the consumer credit and income generation component of the project. In reality, this did not happen and one could actually consider that the two components were operated very much independently in parallel.
32. In spite of the best efforts of E+Co, only 5 enterprises could be mobilized for the enterprise development components, against a target of 10 to 14. Out of the 5 enterprises, only 2 are commercially viable business enterprises offering a variety of energy services to rural communities. The main reasons for the low level of achievement can be attributed to the regulatory constraints, attitudes and cultural values/practices (e.g. unwillingness of prospective entrepreneurs to provide critically needed due-diligence information). These are exacerbated by institutional constraints (e.g. the continuing legal barriers to foreign organizations providing loans to local Chinese enterprises). In order to cope with the ground reality, E+Co had to identify a clear niche for CESI services and investments, namely decentralized generation using clean energy technologies involving “inside the fence” type deals. The remaining 3 enterprises supported by E+Co fall in this category.
33. As it was difficult for E+Co to directly support enterprise development and investment due to the regulatory environment restricting foreign investment in the energy sector, E+Co created a local entity (E+Co China) to facilitate the provision of enterprise development services and capital. Though E+Co encouraged the participation of local technical and financial institutions during the capacity building of small and mid-size alternative energy enterprises, no other organization has come forward to partner with E+Co in investments and the development of targeted funds for clean energy in Western China.
34. TNC on the other hand has been successful in reaching the target of involving 5 rural communities and 600 rural households benefiting from consumer credit for clean energy

installations and support to income generation activities associated with clean energy installations. Community-based GreenVillage Credit Associations were created and registered as specialized rural economic entities to support rural alternative energy service and income generation activities. With assistance from the local government bodies, TNC was able to build their capacity, provide technical assistance, and ensure improved availability of energy technologies to local communities.

35. Local government organizations associated with environmental protection, poverty alleviation, renewable energy promotion, rural energy development, etc., and micro-financial institutions (Rural Credit Cooperatives) were roped in to provide energy linked consumer credit and income generation support to rural communities in the project areas.
36. The project has proven that it is possible **to expand access to clean energy technologies to poorer households in remote rural areas** by assisting them in taking up income generating activities and pay back the loan over a reasonable period of time.¹ This model can overcome the typical constraints faced by many developing countries that have limited financial resources to provide poor households access to clean energy technologies in the form of subsidies and grants. However, given the fact that the transaction costs for implementing the project by the project partners are relatively high, it is unlikely that project activities will be sustained without appropriate policy changes along with active support or participation of the national and local government and local implementing agencies.
37. The efforts made by the project to help develop business plans and extend loans to rural energy enterprises which can enhance the access to clean energy technologies in rural areas through their local presence (to ensure follow-on sales and services) have not found many takers because most enterprises active in this field are State-owned and these companies benefit from large subsidies given by the Chinese Government for poverty alleviation purposes. Finally, it is difficult to assess to what extent the project activities have had any lasting differential impacts in relation to gender because of the lack of systematic data collection and research on the reduction in firewood collection due to the adoption of clean energy technologies and enhanced income generation activities.
38. No enterprise-friendly policy/regulatory recommendations have been reported as outcome of the project. TNC partnered with local institutions with the requisite technical and managerial capabilities, and interest in fostering the long-term development of clean energy approaches. While several official delegations have visited the project sites and have been duly impressed by the successful implementation of the CREED approach, there is no documentary evidence of any government program being influenced through CREED support. For instance, government programs continue to subsidize clean energy technologies but do not support any income generation activities that could eventually result in covering the investments made in clean energy technologies. This could be due to the fact that no government organization was officially invited to become a project partner during the project initiation period. As a result, while close interactions with relevant government departments and their active involvement

¹ The initial target of recovering the loan within 18 months seems quite ambitious. This aspect is covered more in detail in the Paragraph 115.

in the project implementation have been reported, they lacked the sense of ownership/partnership in the project.

39. To evaluate the overall likelihood of impact achievement, the Review of Outcomes to Impacts (ROtI) method was used (Annex 5) which concluded that in the absence of some important impact drivers, there is little likelihood of the widening of the scope of activities and continued long-term project-derived outcomes and impacts. The success of such an initiative would largely depend on the political commitment at the appropriate levels, and follow up policies that favor the involvement of right players and mobilization of adequate financing to make a difference. Some of the impact drivers to achieve the overall objectives of the project have been identified in the ROtI analysis. Firstly, policy dialogue with Chinese national authorities is necessary to advocate phasing out the costly and unsustainable subsidy-based support to technology dissemination in favor of the more sustainable, inclusive and efficient CC-IG driven approach. Secondly, Rural Credit Cooperatives need to synergize with the government programs to combine consumer credit with income generation and promotion of alternative energy products. An important assumption to achieve the intended impacts is that Chinese enterprises adopt more accountable and transparent business practices.
40. One should take note of the two very positive contributions of the CREED project. Government subsidized clean energy technologies rarely reach remotely located poor rural households which generally have limited financial ability to make an upfront payment even for the subsidized products, thus favoring mostly well-to-do households and villages that are easily accessible. CREED project managed to reach out to the relatively poorer households by providing them an income generation opportunity that allowed them to pay back the investment over an extended period of time. Secondly, as local government entities have limited human and financial resources, they tend to limit their operations to easily accessible villages. CREED project, on the other hand, was effective in widening the market for clean energy technologies in more remote areas.
41. Hence as far as the project effectiveness is concerned, it can be considered as ***moderately satisfactory***.

Relevance: Ascertain the nature and the significance of the contribution of the project outcomes to the CBD and the UNFCCC, and the other UNEP thematic sub-programmes.

42. The outcomes of CREED project are relevant to the priorities set by various policy documents adopted by the UN system. It addresses the issue specified by the World Summit on Sustainable Development (WSSD) Plan of Implementation, pertaining to:
 - a. Improvement of “access to reliable, affordable, economically viable, socially acceptable and environmentally sound energy services and resources,...” to the poor through capacity-building, financial and technological assistance and innovative financing mechanisms;
 - b. Action to mobilize the provision of financial resources, technology transfer, capacity building and diffusion of environmentally sound technologies.
43. The project also meets the objectives set by the Agenda 21 to create capacity for sustainable development. The CREED project outcomes also support the UNFCCC goals of achieving sustainable development, particularly the Kyoto Protocol which highlights the need to enhance access to environmentally sound technologies, know-how, practices and processes pertinent to climate change, in particular to developing countries, and to create an enabling environment for the private sector, to promote and enhance the transfer of, and access to, environmentally sound technologies.

44. The CREED project has also responded well to a number of UNEP Governing Council decisions such as:
- a. UNEP GC 16/33 – promoting ways and means to facilitate access to environmentally sound technologies
 - b. UNEP GC 16/41 – assisting developing countries in identifying climate friendly technologies and technology needs
45. In line with the UNEP sub-Programme elements of Energy and Ozone action, the project was designed to initiate activities that ensure protection of forest cover while at the same time minimize climate change, and deterioration of human health. It was also expected to meet with the specific goal set by the Convention on Biological Diversity (CBD) to ensure sustainable use of biodiversity as well as the goal 7 of the MDG which emphasizes the ensuring of environmental sustainability through the reduction of biodiversity loss. As pointed out earlier, while it is understandable that the adoption of clean energy technologies such as fuel-efficient cook stoves, biogas units and solar water heaters has led to the reduction in the use of fuel wood, it may be possible that the widening of the income generating activities thanks to the consumer loans may have resulted in higher demand for energy that could be met with only by the use of the clean energy technologies adopted by the beneficiaries. There is unfortunately no documented evidence to support the fact that there was indeed a reduction in the use of fire wood by the project beneficiaries. The overall evaluation of the project relevance can be rated as **satisfactory**.

Efficiency: Evaluate the cost-effectiveness of achieving the project results, taking into consideration the actual time taken for project implementation.

46. Considering the fact that the project was implemented by two international NGOs, it is normal that the staffing and operational costs for implementing the project would be higher than if the project was being implemented with the active participation of local organizations. If one were to consider only the budgets allocated for the two sub-projects, TNC had a total budget of US\$786,550 of which a little over 50% was reserved for CC-IG fund provision. As the villages selected for implementing the project were far from the project office, the travel costs were bound to be high to ensure adequate field support to the intended beneficiaries. However, TNC could minimize the travel costs by putting in place community-based credit associations and by involving local RCCs for lending funds and their recovery. In addition, TNC was successful in developing partnership with local institutions which were willing to contribute substantively to the project.
47. E+Co had a total budget of US\$1,066,259 of which over 56% was set aside for seed capital investment. The personnel and travel costs of E+Co were relatively higher because the latter had to mobilize international staff from E+Co's Bangkok office, especially during the initial period before E+Co decided to establish a local office in China. Moreover, E+Co had to engage consultants prior to the creation of the local office and had to include the travel of the newly-hired local staff to locations outside China in order to build capacity and provide exposure to innovative projects undertaken by E+Co in other parts of the world.
48. The delay in project implementation can be attributed to the unrealistic time frame set, probably because of the volume of the committed funds available to cover the cost of project implementation (while the budget for providing loan for both the project components were fixed, the cost of project staffing and field operation would have escalated if the project were to be implemented over a longer time frame). In hind sight, the project expectation of recovering the loans within a short span of 18 months looks particularly ambitious,

considering the fact that the project targeted poor households with limited financial capacity and limited experience of taking loans for undertaking income generating activities.

49. However, the delay in realizing project outcomes has not compromised the intended activities to be undertaken by the two project implementers. In fact, as there has not been any change in the overall budget in spite of the project period being extended by more than a year; both parties have stretched their own resources to cover additional staffing and project management costs beyond the initial project duration.
50. TNC was successful in providing a grant of US\$500,000 to the project, contributing more than the amount allocated for CC-IG fund provision. Moreover, TNC also mobilized support from the Bank of America to the tune of US\$500,000 for installing alternative energy facilities in the communities and making new loans in the second phase of GVC activities beyond the project life. TNC also cooperated with local government agencies such as forestry, poverty alleviation and civil affairs bureaus to leverage government funds for both consumer credit and related income generation and training/capacity building activities. TNC was successful in mobilizing RCC loans while the project covered the interest expenses and transaction costs. On the other hand, E+Co has co-invested an amount of US\$100,000 in the project. In return for the US\$600,000 seed capital, E+Co could mobilize capital and in-kind contribution (factory and equipment) amounting to US\$924,899 for joint ventures with the 5 enterprises. UNEP has provided in-kind contributions equivalent to US\$100,000. However, as initially planned, there has not been any flow of capital for the creation of specialized funds within the broader West China context. In sum, the efficiency of the overall project can be considered as **satisfactory**.
51. The overall rating of the project for attainment of objectives and planned results can be considered as **moderately satisfactory**.

B. SUSTAINABILITY

Sustainability: Assess the key conditions or factors that are likely to contribute or undermine the persistence of benefits after the project ends.

52. The field mission conducted as a part of the evaluation exercise almost 2 years after the completion of the project shows both partners of the project continue to pursue the activities initiated during the project and they continue to show commitment to the on-going pilots. The funds recovered from the first pilots serve as revolving funds as these have been ploughed back to cover new areas or satisfy the needs of more rural households in the pilot villages which now show their willingness to avail consumer credit and pay back through income generation activities.
53. As for the support to energy enterprise development, neither has any new enterprise been identified nor has any new investment been mobilized. The project partner continues however to manage and recover the capital invested in the participating enterprises in the framework of the project and has entered the process of second round of investment with existing clients.
54. The five aspects of sustainability, namely financial, socio-political, institutional frameworks and governance, and environmental, are addressed below:

Financial resources: Evaluate the extent to which the outcomes and eventual impact of the project are dependent on continued government support.

55. The CC-IG component was initially launched by TNC by making use of the CREED project fund. Later, TNC collaborated with the government project to mobilize fund from the Government

Poverty Alleviation Project Support. After that, TNC cooperated by providing the consumer credit component for the villagers to acquire clean energy technologies while the EDZ Government provided funding for income generation activities. Lastly, TNC planned to convince RCCs to disburse the CC-IG loan while TNC covered the interest subsidy and the transaction costs incurred by RCC. This was a way for TNC to mobilize additional funds for expanding the number of beneficiaries rapidly, and appeared a more appropriate approach than the full subsidy to alternative energy technologies provided by the Government. In reality, it did not happen because this scheme did not get TNC's internal approval². **Table 1** summarizes the evolution of the different project implementation models proposed by TNC for the CC-IG component.

Table 1. Evolution of the CC-IG project implementation models proposed by TNC

Project models	Launched by	Implemented by	Project fund	Subsidy	Project loan capital management
Implemented by GVC project independently	GVC project	Village CC-IG Association	GVC project loan (CC-IG)	Yes (TNC and Rural energy station subsidy)	RCC
Cooperation with Government project	GVC project	Village CC-IG Association	CC-IG loan + Govt. Poverty Alleviation Project Support	Yes (Rural energy station subsidy)	RCC
Cooperation with Government	Implementation Steering Committee	EDZ Government	GVC loan + Government subsidy	No	RCC
Interest subsidy (CC-IG loan disbursed by RCC, interest subsidy covered by GVC)	GVC project, Yulong County RCC	GVC project, Township RCC	RCC CC-IG Special loan	No	RCC

Source: TNC Monthly Progress Report, November 2005

56. The households who were beneficiaries of the CC-IG project have seen their income level rising and their dependence on fire wood reducing thanks to the GVC model. Therefore, as far as these households are concerned, there are no financial risks that may jeopardize sustenance of project outcomes because they are fully convinced of the positive outcomes of the CC-IG model. Similarly, the enterprises who have received technical assistance and seed capital through the CESI component of the project have seen their business flourishing and

² It should be noted that subsidized credit, although relatively more efficient than fully subsidized household-level technology demonstrations, is often not recommended for many reasons: it is also not financially sustainable, it constitutes unfair competition with other micro-finance providers and creates a crowding-out effect, it labels the loans as project or Government loans which makes clients believe they can get away with not repaying quite easily etc.

they will not hesitate to plough back their profit into R&D activities in order to improve the range and quality of their products and services.

57. The project implementation and its outcomes have been successful on the whole but the pilots have not led to the mobilization of tangible financial resources from interested parties for ensuring onward progress towards impacts. It has been 2 years since the official closure of the project, but there has been no indication of any mobilization of funds from Chinese public players for TNC to cover its transaction costs (administrative, management, overhead and out-of-pocket costs). As the fund lent to the beneficiary is recovered, a part of it will have to be mobilized to compensate for TNC's transaction costs. As a result, barring the additional grant received from the Bank of America, the initial capital made available to TNC for CC-IG activities will not be adequate to continue the same pace of activities.
58. Like in the past, the Chinese government is committed to provide subsidies for the propagation of clean energy technologies in rural areas of China, especially those that are vulnerable to the excessive exploitation of forestry resources. But the subsidy model does not provide the scope for widening the number of beneficiaries and does not make the subsidized products accessible to the poorer rural households who cannot afford them even at the subsidized price.
59. The Rural Credit Cooperative (RCC) was approached by the project team to handle the loan management because it has a wide network of branches in rural areas serving as public banks for collecting deposits and disbursing loans. The RCC also manages several credit lines such as entrepreneurship loan, poverty reduction revolving fund and renewable energy promotion revolving fund, etc. In spite of being a partner of the CREED project and taking part in the loan disbursement as well as recovery processes, RCC is not likely to develop any specific plans to adopt the business model and launch a wider program that can benefit many more poor households in rural areas. This is because RCC will need to have access to capital that covers its own transaction costs in order to remain a viable financial entity, and will not take any risk with its own funds unless it is assured of another party compensating for the transaction costs, similar to what was guaranteed by TNC during project implementation.
60. One major risk identified during the project implementation is the default in repayment of consumer credit during the later phase of project implementation. As explained in Paragraph 62, the loan recovery rates have been rather low in some villages during the second phase after the completion of the project period. However, this issue can be overcome with appropriate policy changes and adoption of a programmatic approach instead of maintaining it as a project.
61. On the basis of the above, one can conclude that there are moderate risks that affect the financial dimension of sustainability of project outcomes, which is therefore rated ***moderately likely***.

Socio-political risks: Assess the risk that the level of stakeholder ownership will be insufficient to allow for the project outcomes to be sustained.

62. During the implementation of the CREED project, it was demonstrated that the loan recovered through income generating activities of the poor households could serve as a revolving fund and could sustain the project outcome. Unfortunately, the experience of lending to the rural households beyond the project duration has been quite poor in some villages. During the evaluation mission, TNC reported the loan recovery rate to be as low as 7 to 11 percent in three villages where some poor rural households had opted to avail solar water heaters from the RCC loan. That is the reason why TNC has taken a decision not to make new proposals until the loans are fully recovered. Interestingly, when the local government witnessed how

the project beneficiaries had been greatly benefited from the solar water heaters, it took the decision of distributing free solar water heaters to each and every household, including those that had earlier taken loan from the project to purchase the water heaters and initiate income generation activities. As a result, the borrowers from the RCC through the GVC activity have now two solar water heaters at home and are obviously not keen to reimburse the loan taken from the project! In this case, stakeholder ownership and awareness in support of the long term objectives of the project is clearly insufficient.

63. Another reason for the lower collection rate for the second round of lending is the role played by the community-based CC-IG associations. Office-bearers of such associations often have political affiliations. Being well connected, they are normally knowledgeable about the various government subsidies available for clean energy technologies and poverty eradication programs. They are also aware of the limited life of the CREED project and do not make much effort to recover the loan made to the households and reimburse the amount to the RCCs. Moreover, the paltry incentives they received from the project did not appear attractive enough for them to play their intended role. Unless there are policy changes at the institutional level to move away from the purely subsidy mode to the CREED model that provided affordable finance, there is little likelihood of the project outcomes being sustained.
64. Finally, one should not underestimate the fact that there are often rivalries between government sponsored programs and NGO initiatives. Unless Government is convinced and accepts the complementary role of NGO, initiatives started with good intention may not be sustained.
65. On the basis of the above, one can conclude that there are significant risks that affect the socio-political dimension of sustainability, which is therefore rated *moderately unlikely*.

Institutional framework and governance: Assess the likelihood of the project outcomes/benefits being sustained through institutional and technical achievements, legal frameworks, policies and governance structures and processes.

66. Assessment of the ground realities almost 2 years after the official ending of the project shows that while the project demonstrated how the government support to the propagation of clean energy technologies has the potential to become sustainable through the CREED model, there is however little likelihood of the project outcomes/benefits being sustained because the project has not involved the major institutional players in the country as stakeholders during the project formulation and its implementation.
67. The project has however set a good example of how public funds could be effectively mobilized to widen the scope for providing clean energy services to poor rural households in remote villages. Thanks to the active participation of those involved in implementing the project, the technical aspects of the project have been well understood by all players in the chain, and the project outcomes have been widely publicized and appreciated among potential institutional stakeholders. **If one were to point out a major drawback of the project, at no point of time there appears to have been any direct dialogue or brainstorming with the relevant Chinese authorities at the higher level to influence policies and decision making in favor of the CREED model.** Whatever interactions the project team has had with the public institutions were mostly at the local level on informal basis or during local and national workshops and seminars, and have apparently not had the intended impact on higher decision-making bodies either at regional or national level. This is corroborated by the fact that in spite of prior requests made by the evaluator to schedule meetings with senior officials of relevant public organizations who could be interested in the sustenance of the project

outcomes, both the project partners were not inclined to organize any such meeting during the evaluation mission.

68. In fact, the example of the local government distributing free solar water heaters irrespective of the capacities of the households to make financial commitments (described in paragraph 62) shows that even though public decision makers appreciated the virtues of the CREED model, they may continue with their old practices of subsidizing households and rural energy enterprises unless there are clear policies formulated at higher institutional levels. In the absence of any political engagement, it is difficult to imagine policy recommendations being made to bring about the necessary institutional changes, legal frameworks, government structures and processes in order to pursue the pilot initiatives further.
69. One can also note that various Government departments are working on programs with similar goals but at cross purposes or with narrower objectives. For example, one Government department works for promoting clean energy and another department promotes poverty alleviation, but the lack of coordination among the different players may lead to inefficiency in terms of output in comparison with the resources mobilized and unnecessary conflicts, jeopardizing the overall outcome. Unless there is a holistic policy adopted at the higher decision-making level and efforts made to bring the different players around the table, it will be difficult for CREED approach to be adopted sustainably.
70. On the basis of the above, one can conclude that there are significant risks that affect the institutional framework and governance dimension of sustainability, which is therefore rated ***moderately unlikely***.

Environmental risks: Assess any environmental risks that can undermine the future flow of project environmental benefits.

71. Though no systematic research method has been adopted to assess the quantum of fuel wood saved through the project activities, there is no doubt that fuel wood was being saved when people switched to cleaner alternatives such as fuel-efficient cook stoves, and it being substituted with the adoption of biogas units or solar water heaters. An initial study conducted in the phase 1 of the project had estimated that an improved stove could save 3-5 tons of fuel wood per annum and a biogas unit would save around 10 kg of fire wood per day (or 3.65 tons per annum).
72. During the evaluation mission, a couple of rural households were asked if they could quantify the amount of firewood saved. They were in full agreement that thanks to the alternative energy devices such as solar water heaters and efficient cook stoves, their need for fire wood was less but could not really quantify as they did not keep track of the actual consumption. It was obvious that the adoption of clean energy devices has greatly relieved these rural households of the drudgery associated with the collection of firewood and the time saved that could be put to better use, such as engagement in income generation activities. It was encouraging to note how people took pride in showing the clean energy devices that had helped to transform their living conditions by ensuring cleaner and healthier environment and more free time.
73. The Chinese Government is fully aware of the problems associated with deforestation, particularly in zones where villagers lack access to modern energy services. The Government has, since a long time, recognized renewable energy as a means to deliver improved energy services and quality of life to populations in remote rural areas. Support has been extended for research and development, domestic manufacturing and dissemination of affordable energy options contributing to rural income and social development.

74. With the greater awareness among the public decision makers and active involvement of NGOs, there is little likelihood of any dam being constructed or any industrial/commercial activity being undertaken in a protected area that could jeopardize the viability of nearby protected forest areas and neutralize the biodiversity-related gains made by the project. One may safely conclude that there are no environmental risks that can undermine the future flow of project environmental benefits just as there would be no risk if the project was replicated elsewhere in China.
75. On the basis of the above, one can conclude that there are no risks that affect the environmental dimension of sustainability, which is therefore rated *likely*.
76. The overall evaluation of the project sustainability can be rated as *moderately unlikely*.

C. CATALYTIC ROLE AND REPLICATION

Catalytic role: Assess the catalytic role played by the project by considering the following: incentives, institutional changes, policy changes, catalytic financing, project champions.

77. The activities undertaken by the project demonstrate the catalytic role played by UNEP in supporting the development and adaptation of clean energy technologies that can result in all-win solutions for the rural enterprises, poor rural households, public authorities and the environment. These are further elaborated below.
78. **Incentives:** Since the early 1980s, the Chinese Government has adhered to the policy of supporting the development of renewable energy to deliver improved energy services and quality of life to population in remote rural areas. The primary financial mechanism adopted by the Government has been to subsidize the cost of clean energy technologies. While this strategy has helped a vast number of rural households, the number of beneficiaries is still limited due to the Government's annual budgetary constraints. Moreover, in spite of the subsidies, many poor rural households do not have the resources to make a down payment for the remaining cost of the subsidized clean energy technologies. In some cases, such technologies do not reach remote areas because of the higher transaction costs. The project has played a catalytic role by demonstrating a business model in which the poor rural households not only can afford to pay for the subsidized clean energy technology but also improve their livelihood and their quality of life. The project has also shown that there is no need to create new entities for this to happen but that mobilizing the existing organizations (e.g. RCC and local government) and providing a small incentive for their active participation can be sufficient.
79. The other catalytic role played by the project was to build capacity and make investment in clean energy enterprises. The Chinese Government has a strong involvement in the clean energy sector and business is mostly run by State-owned companies which often receive large subsidies from the Government for poverty alleviation purposes. This approach does not encourage the participation of private players or much innovation in product design. Having access to a captive market and easily available grants, the State-owned enterprises neither see the merit of changing their business culture nor look for business capital that has to be borrowed from the market and paid back. By working closely with the local private companies that are involved in manufacturing clean energy products, the project provided a combination of business development "hand-holding" and seed-capital, and demonstrated that by gaining knowledge and having access to capital, these companies can quickly improve their profit margin through product innovation and suitable marketing strategies.

80. **Institutional change:** The project set a good example of changes that could be brought about both from the supply and demand sides of the clean energy options, and attracted the attention of many institutional actors. This is supported by the fact that many government officials have visited the project sites and shown great appreciation for the CREED model. However, there is no concrete proof of these sentiments having been converted into changes in institutional structure or behavior so far. As stated in paragraph 38, this could be because these public entities were not officially included to become project stakeholders right from the start of the project. Secondly, there is a lack of coordination among the various government departments at the implementation level. This can be avoided if there are appropriate policy changes brought about to enforce developmental activities in a more coordinated manner.
81. **Policy change:** The project activities do not appear so far to have contributed to policy changes to favor the sustenance of the CREED model. There is documentary evidence of the project partners interacting and sensitizing the local decision making bodies on more informal basis. What is lacking perhaps is the need for UNEP to take up the dialogue at a higher decision making level in order to influence policy changes that would ensure the adoption of good practices learnt from the project.
82. **Catalytic financing:** In the absence of any meaningful dialogue with the higher level decision making bodies in the Government, the project has not ensured sustained follow-on financing from the Government and/or other donors.
83. **Project champions:** Both project partners have been very committed to achieve the intended results. This is proven by the fact that in spite of the delays in the execution of project activities, they have continued to carry out the project activities without seeking additional financing. They still continue to actively pursue the project goals two years after the official project completion date. Faced with many country-specific institutional and socio-cultural barriers, they have not given up and have successfully proven the merits of the CREED model. One should also recognize the active role played by the various government departments in providing government grant/subsidy as well as technical support without which TNC would not have been able to achieve such impressive results. Similarly, RCCs have played an important role in lending and recovering money for clean energy and income generating activities. Their local presence and knowledge has allowed the implementation of the program cost-effectively.

Replication approach: Assess if the project is suitable for replication, and if so, if the project approach been replicated.

84. There is no doubt that the project is suitable for replication as it benefits all concerned: the enterprise, the poor households, the local and national Government, and the environment. However, the project approach has so far not been replicated in spite of the fact that the project team had undertaken communication activities for disseminating the project outcomes. The main reasons for the project not being replicated are explained in the two following paragraphs.
85. The status of the project beyond the official completion date shows there is so far no local stakeholder who has shown commitment to adopt and expand the operational model that was propagated by the project. As stated in paragraph 38, this could be mainly due to the fact that the project was initiated and launched by non-Chinese organizations without ensuring the active engagement of any national or local stakeholder right from the project inception phase. As a result, even though local Chinese public agencies have supported the project by sharing their resources and others have visited the project areas and witnessed the way the project

has been successfully operating, there has been no initiative so far to replicate the model either in project implementation areas or in the neighboring provinces.

86. The report of the mission undertaken by UNEP Project Officer in September 2008, after the completion of the project mentions that *GVC will provide UNEP with a proposal for scale-up for review and assistance in seeking additional donor funding*. It goes further to say that *E+Co will prepare a paper elaborating the policy issues and recommendations for a more proactive effort at removing the policy barriers, and the paper will be used to initiate dialogue with Chinese policy stakeholders, with UNEP catalyzing/orchestrating the needed consultation*. When interviewed by the evaluator, the UNEP Project Officer confirmed that UNEP had not received to date any proposal for scale-up or any paper to initiate policy dialogue. As stated in paragraph 67, such missing impact drivers are the main stumbling blocks for the replication of the CREED model in Yunnan and the neighboring provinces.
87. Though TNC has reported conducting a great number of training in project areas, there is no comprehensive package of capacity building materials available that could be used by those who intend to take up similar activities elsewhere.
88. The overall evaluation of the project catalytic role and replication can be rated as **moderately satisfactory**.

D. STAKEHOLDER PARTICIPATION / PUBLIC AWARENESS

Information dissemination, consultation and "stakeholder" participation.

89. During the project formulation, the main CREED partners – UNEP, TNC and E+Co, had identified six main entities for the implementation of the project: (1) rural households; (2) clean energy enterprises; (3) enterprise development and investment organization; (4) consumer credit, micro enterprise and income generation intermediary organizations; (5) financial institutions; and (6) government. The project was quite successful in mobilizing the above entities.
90. **Rural households:** These are undoubtedly the most important stakeholders of the project. The evaluator had an interesting discussion with the former Director of the GVC component and learnt that initially a limited number of rural households showed interest in joining the community-based GVC associations because many did not have any prior experience in income-generating activities and were not sure of being able to repay the loans. Thanks to the active role of the households in choosing the type of income-generating activities that suited them and their active participation in the hands-on capacity-building training provided by the GVC component, these households could improve their financial situation and quality of life, and were able to repay the loans. In fact, the villages which were the first to initiate the project later served as showcase for the other villages by receiving the newly formed community-based GVC associations and explaining the way they had benefited from the project. Once the money lent by the RCCs were recovered, the beneficiary households served as good examples and encouraged the remaining households in the pilot villages to take part in the CC-IG scheme in the second round of lending by TNC.
91. **Clean energy enterprises:** Only two clean energy enterprises involved in meeting the rural energy demand took part in the project and immensely benefited from it. Their participation in the project allowed them to bring in a certain level of professionalism, mobilize the money borrowed for undertaking research and development activities leading to the introduction of new and more efficient products in the market, and increase their earnings considerably by widening their market presence. As explained in paragraph 32, faced with the existing

- regulatory environment and prevailing business ethics, E+Co decided to widen the scope to include more energy enterprises in the industrial sector outside the project area.
92. **Enterprise development and investment organization:** As it was difficult for the project to directly support enterprise development and investment due to the regulatory environment restricting foreign investment in the energy sector, E+Co created a local Chinese provider of enterprise development services and capital. Though E+Co encouraged the participation of local technical and financial institutions during the capacity building of small and mid-size alternative energy enterprises, no other organization has come forward to provide similar services.
93. **Consumer credit, micro enterprise and income generation intermediary organization:** The project tied up with RCC for the provision of consumer credit for clean energy products and income generation activities. TNC collaborated closely with the Yunnan Academy of Social Sciences and Lijiang Conservation and Development Association for activities related to project design, village baseline data gathering, feasibility study and capacity building, etc. However, no organization had shown interest to continue similar activities by the time of the completion of the project. Hence TNC decided to continue the project initiatives by creating and supporting a local NGO (Green village Development Center) that consisted of local TNC staff who were well trained through on-the-job experience gained in the project.
94. **Financial institutions:** As RCCs are widely established in all the provinces of the project area, they were invited by TNC to take part in the project on a commercial basis and handle the consumer credit component involving lending of capital and recovery of the loans disbursed. During the implementation of the project, RCCs were able to achieve 100% loan recovery in 4 sites and 70% recovery rate in one site. Later, RCCs even agreed to provide loan while the project covered the interest component and the transaction costs. However, RCCs have not shown interest in pursuing this model further on their own, perhaps because they are able to easily access other subsidized funds from the Government through the enterprise creation and poverty alleviation schemes.
95. **Government:** The project collaborated with relevant government departments such as forestry, agriculture, civil affairs and poverty alleviation offices to obtain financial subsidy and get technical support for the installation of alternative energy devices, income generation and capacity building activities in the communities. Many of these organizations have long experience of managing Government subsidy for the dissemination of clean energy technologies in rural areas. During the implementation of the project, they participated in the project activities by channeling Government subsidies and mobilizing State-owned enterprises involved in installing and servicing renewable energy technologies. Though they appreciate the CREED approach of assisting poorer households in rural areas through the initiation of income generation activities which are instrumental in reimbursing the loans for renewable energy products, they themselves do not have the authority or the means to take up similar activities unless they receive policy directives and financing from the higher decision making authorities.
96. **Annex 4** provides a summary of the communication and outreach activities effectively undertaken by the project team throughout the project duration. Apart from posting updated news on the progress of the activities at the project web-site both in English and in Chinese, the project made use of printed and visual media effectively. A documentary on the project was produced by China Central Television (CCTV) and broadcasted on several channels. Awareness and sensitization programs were organized for the potential customers by arranging study visits to familiarize them with the way the CREED model had been adopted in some villages. The project team frequently received Chinese and foreign visitors in project villages, and presented the project outcomes in important local, national and international

forums. The project was nominated for the World Clean Energy Award 2007 and was selected by Wuppertal Institute as one of the 4 good practices of microfinance for renewable energy development.

97. The project has contributed positively to the public awareness in the pilot villages. This is proven by the fact that those households which were initially reluctant to participate in the project have shown great interest to take part in the second round of loan disbursement. Similarly, the printed and media campaigns were effective in attracting local government officials and foreign delegates to the pilot villages to witness and appreciate the benefits accrued by the project beneficiaries.
98. The overall evaluation of the project stakeholder participation and public awareness can be rated as **satisfactory**.

E. COUNTRY OWNERSHIP / DRIVEN-NESS

Country ownership / driven-ness: Assess the relevance of the project to national development and environmental agendas, recipient country commitment, and regional and international agreements.

99. There is no doubt about the relevance of the project to national development and environment agendas. TNC and the Yunnan provincial Government have been engaged in an interdisciplinary research effort targeted at the conservation of biodiversity, compatible economic development and regional planning in Northwest Yunnan, with the culmination of a "Conservation and Development Action Plan" in March 2001.
100. As stated in paragraph 96, the project was indeed effective in providing and communicating information on consumer credit and income generation activities. The same cannot be said, however, about rural energy enterprise development because most of the activities undertaken by E+Co were targeted specifically towards the private sector with practically no interaction with the State decision making entities.
101. The very good efforts of the CREED project have however not catalyzed action in the participating country to improve decision making in relation to the conservation and management of forests. This could be explained by the fact that there was no formal involvement of government institutions in the design and implementation of the project (more details in paragraphs 38 and 85), and a lack of policy dialogue between the project proponents and the high-level Chinese decision makers (as described in paragraph 86), conditions that are essential for institutionalizing the CC-IG approach.
102. China has law, regulation and policy that show its commitment to biodiversity conservation but one may question whether adequate organizational, human and financial resources have been allocated and whether adequate incentives have been created in practice to realize the commitment. The CREED project has showcased an innovative manner in which the Government can tackle several developmental issues while ensuring biodiversity conservation. To the knowledge of the evaluator, the CREED project has not had any policy dialogue with the State Environment Protection Administration (SEPA) which is officially in-charge of biodiversity protection and for developing and maintaining the biodiversity data management and information system.
103. The overall evaluation of the country ownership and driven-ness can be rated as **moderately satisfactory**.

F. ACHIEVEMENT OF OUTPUTS AND ACTIVITIES

Assess the project's success, the soundness and effectiveness of the methodologies used, and the extent the project outputs produced have the weight of scientific authority/credibility.

104. The expected outputs of the project included the following:
- a. Enterprise development:
 - i. Number of local renewable energy enterprises established or expanded and providing improved energy services in rural areas: 10-14
 - ii. Number of rural business development organizations that begin to offer enterprise development services, either with CREED initiative partners or independently: 1 or 2
 - b. Consumer credit and income generation
 - i. Number of rural households installed clean energy technologies: 600
 - ii. The amount of fuel wood consumption reduced
 - c. Alternative energy financing:
 - i. Number of financial institutions that begin to finance sustainable energy enterprises/projects: 2-3
 - ii. Number of financial institutions that provide finance to end-user acquisition of alternative energy technologies: 1-2
 - iii. New investment leveraged from public and private investors for projects in the CREED project area: US\$10 million over 5 years
 - d. Policy support:
 - i. Number of enterprise friendly policy/regulatory recommendations made
 - ii. Number of government programmes at different levels influenced through CREED support: 2-4
105. As far as enterprise development is concerned, only 2 local renewable energy enterprises have been supported to provide improved energy services in rural areas. This is low compared to the target set by the project in spite of the considerable efforts put in by E+Co. Paragraph 32 describes the key reasons for this shortfall. As a result, E+Co was obliged to modify the objective during the course of execution and include investment in 2 enterprises that are involved in industrial biogas development and 1 enterprise for biomass power plant for connection to the utility grid. As for the offer of enterprise development services, no new rural business development organization has come forward to widen the scope of activities taken up by the local RCCs as CREED initiative partner. **Table 2** provides a summary of the partnerships created and their salient features. The performance of the E+Co CREED portfolio as of August 2010 is detailed in Appendix 6.

Table 2. Summary of the achievements of the Clean Energy Services Initiative (CESI)

Partner	E+Co contribution	Co-investment capital or and valued in-kind contribution from partner	Project results
Dali Jinhui Power Generation Equipment Company	Provision of EDS and US\$50,000 investment	US\$80,000	Creation of Resources and Energy Power Equipment Co. Ltd. to manufacture small hydro turbines and built-in controllers
Azure International	Provision of EDS and US\$100,000 investment	US\$337,000	Creation of BioQi to engage in the development of industrial biogas projects
GEE Engineering	Provision of EDS	US\$123,691	Creation of New Edge to engage in

Consulting Limited	and US\$100,000 investment		the development of industrial biogas projects
Shanghai Luqi Richway Bio Company	Provision of EDS and US\$250,000 investment	US\$250,000	Creation of Shandong Richway Biomass power Plant Engineering Consulting
Kunming Rongjia Stove & Cooking Appliances Co. Ltd.	Provision of EDS and US\$100,000 investment	US\$134,208	Creation of Kunming Xileile Bio-Technology Co. Ltd. to design and manufacture efficient cook stoves

Source: Based on data provided by E+Co

106. As for the consumer credit and income generation activity, 575 rural households in 5 action sites had adopted clean energy technologies during the project implementation period, as against the target of 600 households.

Table 3. Summary of consumer credit and clean energy investments (10/2004-02/2008)

Action site	Households approved loans	Solar water heater	Biogas unit	Fuel efficient stove & fireplace	Total
Haixi	54	21	25	11	57
Liguang	43	2	2	57	61
Xidang	154	103	-	48	151
Xinren & Liren	35	35	-	-	35
Xinzhu	289	-	40	391	431
TOTAL	575	161	67	507	735

Source: Data gathered from TNC during the field evaluation mission

The loan recovery rate was 100% except for Xinzhu where 70% of the loan could be recovered.

Since February 2008, the activity has been further widened to another 293 households in 5 action sites.

Table 4. Summary of consumer credit and income generation activity (after 02/2008)

Action site	Households approved loans	Solar water heater	Biogas unit	Fuel efficient stove & fireplace	Total
Liguang	85	12	1	38	51
Haixi	51	18	-	6	24
Shitou	91	91	-	-	91
Tangdui	32	32	-	-	32
Tangman	34	34	-	-	34
TOTAL	293	187	1	44	232

Source: Data gathered from TNC during the field evaluation mission

107. As mentioned in paragraph 37, no systematic research has been done by TNC throughout the implementation of the project to quantify the reduction in fuel wood consumption by the households that had installed clean energy technologies. There is only one reference to the Xingzhu village where TNC reported 54 households having installed alternative energy facilities and reduced their annual fuel wood consumption from 700 m³ to 415 m³.

108. **Tables 5 and 6** summarize the CREED achievements at the outputs and activities levels with reference to the CREED Revised Logical Framework Matrix. As one can observe from these tables, barring from a few deficiencies, the project has delivered most of the programmed outputs, both in quantity and quality. The project outputs have good potential to influence policy and decision making at the regional and national level. The very fact that the project has received recognition and appreciation both within and outside the country shows the relevance and usefulness of the CREED project. In spite of the initial delay and country-specific policy and cultural constraints, the outputs have been delivered, though with reasonable time delays.
109. While TNC reported conducting a number of training in the project areas, no specific training materials seems to be available in the project. This is understandable because TNC did not have the necessary expertise to conduct training on clean energy technologies or consumer credit and income generating activities, and mostly depended on relevant government departments for capacity building activities. On the other hand, E+Co has adapted and translated REED Toolkit which can serve as a useful guide for energy enterprises.
110. Most project documents have been factual, focusing mainly on reporting the activities of the project. At times, “lessons learnt” have been reported on the basis of the problems or issues faced during the execution of the project. Also presented are the feedbacks and appreciations expressed by project partners and beneficiaries. As mentioned in paragraph 86, what is missing however is a synthetic document that summarizes the real experience gained and the lessons learnt from the project which could inspire Government decision makers in China or other developing countries to take note of the CREED model more seriously and contemplate making necessary policy changes so that the model can be widely replicated in China or any other developing countries facing similar challenges.
111. It would have been useful to have another more working level document that presents the overall business model, defining clearly the procedure to be followed and quantifying precisely the need for resources (including the revolving fund and the other variable costs such as country-specific salaries, capital subsidy, incentives, etc.) so that concerned public decision makers and/or bilateral/international donors would be able to support programs on the basis of this document.
112. The overall evaluation of the achievement of output and activities can be rated as **satisfactory**.

Table 5. Evaluation of the program outputs

Annex 6: CREED Revised Logical Framework Matrix		Project achievements
Overall Objective Contribute to the environmentally sound development of Western China by improving patterns of rural energy use, reducing greenhouse gas emissions, and stemming biodiversity loss from deforestation associated with fuel wood gathering.	Objectively Verifiable Indicators Number of households using alternative energy technologies and concurrent decrease in per capita fuel wood consumed from unsustainable sources.	
Outputs (Phase II: Implementation) <u>Enterprise Development</u> 1. Commercially viable business enterprises offer in a market environment a variety of energy services to rural communities based on alternative energy technologies and improved energy practices. 2. A local based institution offers enterprise development services in close collaboration with other local partners by identifying and supporting small and mid-size alternative energy enterprises through their critical start-up phase.	Objectively Verifiable Indicators 1. Number of local renewable energy enterprises established or expanded and providing improved energy services in rural areas (target: 10-14). 2. Number of rural business development organizations that begin to offer enterprise development services, either with the CREED initiative partners or independently (target: 1-2).	1. 2 local renewable energy enterprises expanded (3 others energy enterprises outside the action area) 2. Local E+Co office offers enterprise development services
Consumer Credit and Income Generation 1. Well established consumer credit programme which supports rural alternative energy services and income generation in NW Yunnan. 2. Improved availability of alternative energy technologies to local communities and reduced fuelwood consumption.	1. Performance of the programme. 2. Numbers of rural households installed clean energy technologies (target 600) and the amount of fuelwood consumption reduced.	1. Good performance 2. 575 rural households by February 2008 3. No verifiable data
Alternative Energy Financing 1. Local financial institutions offer financial support to the alternative energy business sector and end-user acquisition of alternative energy 'technologies'.	1. Financial community investment in renewable energy, including the number of financial institutions that begin to finance sustainable energy enterprises/projects (target: 2-3) and provide finance to end-user acquisition of alternative energy technologies(target: 1-2). 2. Amount of new financing leveraged from public and private investors for projects in the CREED project area (target US\$10 million over 5 years).	1. None 2. US\$557,000 of co-investment of the 5 enterprises for establishing joint ventures
Policy Support 1. Local, provincial, and national government agencies have developed and implemented policy instruments and strengthened institutions supporting sustainable rural energy service provision by energy enterprises.	1. Number of enterprise friendly policy/regulatory recommendations made. 2. Number of government programmes at different levels influenced through CREED support (target: 2-4).	1. None 2. None.

Source: Analysis of the half-yearly reports

Table 6. Status of the program activities

MAIN ACTIVITIES	PROJECT ACHIEVEMENTS
Capacity Building Component	
1. Develop skills of E+Co West China team based in Yunnan. Includes enterprise and investment structuring and management, the ability to generate investment pipeline and provide services to entrepreneurs	E+Co local office established in Kunming, Yunnan (registered in 2005) and on-the-job training provided
2. Translate and further adapt "REED" Finance Toolkit	Completed and distributed to over 40 local energy entrepreneurs.
3. Organize and conduct workshops for entrepreneurs, financial institutions and others	Conducted in 3 provinces for over 100 participants in April 2006
4. Provide enterprise development services to entrepreneurs, generating 10 or more actionable business plans	EDS service provided to about 100 SMEs across China, leading to 5 actionable business plans
5. Alternative energy familiarization for consumer credit and income-generation opportunities	Several community-based trainings on renewable energy and income generation conducted in partnership with local governments, benefitting the households taking in the project
6. NGO support	None reported.
7. Work with various government agencies on policy / program reforms and project implementation in the targeted areas that promote or favor alternative energy options and support CREED projects	Collaborated with local government agencies for project implementation in the target areas; but not on policy / program reforms
Enterprise Development Component	
1. Continuously build the 50-70 enterprise pipeline	Built pipeline for about 100 SMEs
2. Provide post-investment services to help investee companies to grow	Post-invest services provided to the 5 enterprises which took loan
3. Provide \$600,000 CREED seed capital to 10 to 14 energy enterprises	\$600,000 CREED seed capital provided to 5 energy enterprises
4. Seek out partners for and undertake the formation of a specialized investments funds	Attempted but not succeeded.
5. Attract co-investment	Co-investment for joint venture with the 5 energy enterprises: \$924,899 as capital and in-kind contribution (factory, equipment)
Consumer Credit, Micro Enterprise and Income-generation Component	
1. Identify operational parameters of investment facility for consumer credit and income generation opportunities	Different models tested in collaboration with RCCs and by mobilizing additional capital from local government agencies
2. Create new or expand existing local partners for consumer credit and income generation component	A local NGO, Green Village Development Center (GVDC), created by involving experienced local project staff after the project ended
3. Secure additional financing for provision of Consumer Credit and Income Generation support	Additional financing of US\$500,000 secured from the Bank of America to lend beyond the project life and to cover transaction costs
4. Through partners, start extending CREED support for consumer credit and income generating activities for alternative energy	Through GVDC, extended activities after the official completion of the project.
Communications and Outreach Component	
1. Prepare a CREED communications strategy for local, national, and international audiences	No formal communication strategy prepared.
2. Share CREED experiences with local and national governments, UN and donor agencies, development agencies, foundations, etc.	CREED experience shared through print and visual media, workshops, site visits during project operation
3. Publish about 20 articles on the CREED project, both to national and international audiences, with focus on 1) business, 2) development and 3) energy/climate change policy audiences	No list of published article is available. Some presentations made in national and international forums and some articles published in print media.
4. Present CREED programme and projects at international meetings; where practical, assist local entrepreneurs and partners to attend/present at these events	CREED programs and projects were presented at international meetings
5. Prepare / disseminate project status reports	Project status reports were regularly updated on project web site

Source: Analysis of the various project reports and interview with TNC and E+Co

G. PREPARATION AND READINESS

Assess if there was enough thought put in during the preparation of the project by taking into account important factors guaranteeing the success of the project.

113. Prior to the launching of the project, there was a design phase from August 2002 to March 2003 that helped to assess the ground realities and formulate the proposal with the involvement of both TNC and E+Co, two reputed partners with very good track records and capacity to execute international projects. The CREED project followed the spirit of similar projects developed earlier in Africa and Brazil and lessons from these projects were taken into consideration. Hence there can be no doubt that the project's objectives and components were clear to both the partners of the project.
114. However, it would appear that the partnership arrangements were not properly identified and the roles and responsibilities of the partners were not clearly defined. The reasons and the consequences in terms of the split of the project activities and the delays in project execution are described in more in details in Paragraph 31.
115. As pointed out in Paragraph 48, the project seems to have underestimated the unpredictable nature of working in the rural context with limited prior experience and no formal local partners. The initial plan to recover the loan within a time frame of only 18 months was rather short.³ Discussions with the former Director of GVC component revealed that the project targeted households having relatively strong income generation capacity with the help of project support, and it was possible that these households reimbursed their loans by mobilizing funds other than what they earned from income generation activities initiated with the loan. The evaluator was unable to get hold of any socio-economic study that actually analyzed how the rural households were able to recover the loan through income generation activities within 18 months. It would appear that the project recovery rate was lower in the second phase because as the project implementing partners had limited budget for staffing beyond the planned project implementation period, they were obliged to minimize the activity just to ensure the smooth execution of the project.
116. Though TNC had the field experience in promoting the dissemination of clean energy mainly through the subsidy mode, it however did not have any prior experience of providing consumer credit for income generation activity. On the other hand, while E+Co has a very good track record of nurturing energy enterprise development in different parts of the world, it had no prior experience of operating in China's business environment. From the project document, it can be seen that E+Co was aware of some of the institutional and legal issues but appears to have underestimated the hurdles that would be faced by a foreign entity to invest in the energy sector in China.

³ If one assumes that a rural household took a loan, 50% of it to initiate income generation activity and the remaining 50% to purchase a renewable device, and was able to pay back the loan in 18 months, this means the household was able to generate a net benefit of 66% of the total loan per year.

117. The non-inclusion of a national counterpart institution in the project was pointed in Paragraph 38. This later became a major drawback for the implementation of the project because the national counterpart institution could have facilitated the communication/interaction with national and local stakeholders, better guided the foreign implementing partners and contributed local wisdom to overcome some of the major barriers faced during project execution.
118. In some countries, the relationship between the Government and the NGOs is not always cordial, and China is not an exception to it. In the case of CREED project, two foreign NGOs were taken on board and no national counterpart institution could be identified for the formulation and execution of the project. In such a situation, it would be difficult to expect strong country ownership and driven-ness in the project, especially at the institutional and decision making level, even though the project has been successful in demonstrating that given a chance, poor households are capable of pay for clean energy and improve their living standard if they are supported to take up income generation activities.
119. The overall evaluation of the achievement of preparedness and readiness can be rated as **moderately unsatisfactory**.

H. ASSESSMENT OF MONITORING AND EVALUATION SYSTEMS

Assess the quality, application and effectiveness of project monitoring and evaluation plans and tools, including risk management based on the assumptions and risks.

120. Annex 4 of the evaluation ToR specifies that a list of documentation relevant for the evaluation of project supervision is to be provided to evaluator by responsible officer. The evaluator met the responsible officer at the beginning of the assignment and requested to have access to the relevant documents. However, the evaluator had to wait for several months and make fresh requests to the Project Officer to get access to the relevant documents, leading to delays in the submission of the draft evaluation report. **Annex 3** provides the technical reports that were accessed for completing the evaluation.
121. The initial project document contained a Logical Framework Matrix (Annex 8 of the document) with some assumptions but not specifying any risks. It is true that the project faced some hurdles that were not foreseen during the framing of the project document. Following the initial temporary halt of activities for a few months in 2004, a document for the restructured project was prepared early 2005. This document included a revised Logical Framework Matrix with a certain number of assumptions quite similar to the ones included in the initial project document, but no specific risks to the project were mentioned. The section 6 of the original project document covering the monitoring component just mentioned about the responsibilities of partners in terms of reporting but there is no clear monitoring and evaluation plans and tools included for assessing the management of risk based on the assumptions made in the project document.
122. As can be seen in **Annex 5**, the time frame allocated for most activities was rather broad and there were no intermediary steps specified to assess the level of progress made to achieve the ultimate target. On the contrary, the revised project document included a revised budget summary with budgets allocated on annual basis, with the assumption that the annual budget was meant for ensuring the completion of some specific activities in a year. However, the project partners highlighted in the semi-annual reports the specific activities they had undertaken to fulfill the main tasks and the difficulties they encountered. For example, on the basis of the feedback received in the first year of implementation, discussions were held among the partners to restructure the project and overcome the drawbacks. Similarly, on the

basis of the feedbacks received by the project implementers in 2005, a revised annual work plan was prepared for 2006.

M&E design: Assess the M&E design aspects, including SMART-ness of indicators, adequacy of baseline information, arrangement for monitoring of implementation, and arrangement for evaluation.

123. There are specific indicators in the log frame for each of the project objectives and outcomes. Majority of these indicators are relevant to the project objectives and outcomes. Considering the budget and time frame of the project, these indicators can be considered as sufficient and quantifiable.
124. A summary of the “Basic Data and baseline assessments of CREED project site research” in the initial project document provides baseline information on potential pilot villages, their energy consumption, energy consumption structure and function, the status of fuel wood stoves in use and energy saving potential, and the cost barriers for the penetration of energy efficient cook stove and biogas units. However, during the implementation of the project, new villages were selected in consultation with local governments, and with the technical assistance of the Yunnan Academy of Social Sciences and Lijiang Conservation and Development Association. Factsheets were prepared for each village, providing geographical, demographic and economic information that were helpful to narrow down to the types of alternative energy devices and income generating activities that were well suited for the village. However, no baseline information was available on the amount of fuel wood used by the families in the selected villages. Apart from this, the desired level of achievement for indicators is based on a reasoned estimate of baseline.
125. Budget was allocated for M&E activities. UNEP was assigned as the responsible center for M&E activities. The time frame for M&E activities was specified in the Section 6 of the initial Project Document. It outlined the monitoring and reporting requirements for the project, particularly those pertaining to the submission of half-yearly progress reports, terminal report, and financial reports.
126. Specific targets have been set for project outputs and the desired level of achievement is specified for all indicators of Objectives and Outcomes, except for the indicator that is meant to verify whether the consumer credit program is well established as it just refers to “performance of the programme”.
127. On the basis of the above, one can rate the M&E design as *satisfactory*.

M&E plan implementation: Verify the M&E system in place and the way it was implemented.

128. Based on the revisions proposed in the restructured document as well as the annual work plan included in the UNEP report and the half-yearly reports submitted by the project implementing partners, it can be concluded that an M&E system was in place and facilitated timely tracking of results and progress towards project’s objectives.
129. The biannual project reports were fairly complete, accurate and provided a good representation of actual project performance. These reports followed the standard guidelines set by UNEP. This approach was effective as it forced the team members to keep focus on the ultimate objective and goals while being burdened with the day-to-day challenges of field activities. By identifying the deficiencies during a particular time period, the project team strived to take appropriate corrective actions to minimize or rectify the earlier deficiencies and make extra efforts to catch up with any delays.

130. The information provided by the M&E system was used during the project to improve project performance and to adapt to changing needs. For example, the half-yearly reports were helpful for UNEP to revise the implementation target and extend the project duration in order provide adequate time for the project partners to effectively implement the planned project activities.
131. As shown in **Annex 3**, not all biannual project reports were made available to the evaluator. The review of those available shows that though these were quite complete and accurate, a better understanding was gained by going through the monthly or quarterly reports that were prepared by the project partners with more details. Though there was no mid-term evaluation conducted, it is reasonable to say that UNEP made use of the information provided by the partners to improve project performance and to help them adapt to changing needs. On the other hand, there is no documentary evidence to corroborate the fact that the project included proper training for parties responsible for M&E activities.
132. There was no mid-term evaluation or review of the project. The reason for this, according to the UNEP Project Officer, was that half way through the project both the partners of the project had not made much progress in terms of CC-IG support activities or Seed Capital Investment. The evaluator considers however that a half-way review would have been very useful as it would have assessed the overall direction and strategy of the project. Analysis of the funds usage shows that TNC had already engaged 80% of the budget allocated for CC-IG support activities by 2006. Since TNC's activities were more crucial for the success of the CREED project, a half-way review could have highlighted the necessity of engaging in policy dialogue with the national/local stakeholders to articulate greater commitment from the government and larger impacts beyond the project duration. Policy influencing should in fact have been an integral component of the project strategy instead of considering it only when the project activities were completed.
133. On the basis of the above, one can rate the M&E plan implementation as ***moderately satisfactory***.

Budgeting and funding for M&E activities: Determine whether the support for M&E was budgeted adequately and was funded in a timely fashion during implementation.

134. The revised project document had a budget line allocated for project monitoring and evaluation mid-way (2006) and at the end of the project (2007), under the responsibility of UNEP.
135. As pointed in Paragraph 131, there was no mid-term evaluation conducted. The budget for the final in-depth evaluation seems inadequate, particularly considering the limited time allocated for the field mission for a project of this nature which requires travelling to various locations where the project has been implemented, meetings and discussion with project key personnel and their collaborators, project beneficiaries, etc. Hence the budgeting and funding for M&E design can be rated as ***satisfactory***.
136. Considering all the above three criteria, the overall assessment of M&E systems of the project can be rated as ***moderately satisfactory***.

I. IMPLEMENTATION APPROACH

Analyze the project's management framework, adaptation to changing conditions, partnerships in implementation arrangements, changes in project design, and overall project management.

137. As pointed out in Paragraph 31, one of the major changes in the project has been the split of activities between the two main implementing organizations. According to the evaluator, this change in implementation arrangement along with the difficulty to attract rural energy enterprises has led to a major deviation in the project overall objectives. The restructured project document clearly stated that the CC-IG implementation team at TNC will coordinate with E+Co team that is responsible for the Enterprise Development component of the project. In reality, E+Co conducted the capacity building of the EDS on its own whereas TNC handled the capacity building of CC-IG components in collaboration with local institutional and research partners. During the evaluation process, it was learnt that there had been no collaboration or interaction whatsoever between the two implementing partners after the split in their activities formalized by UNEP and each of them dealt with their respective parts in isolation. Such an arrangement was certainly not conducive for the effective management and implementation of the project.
138. In the initial project document, only one CREED Management and Investment Committee was proposed under the supervision of the three partner organizations to assess and approve the Seed Capital that could be lent to support the Clean Energy Services Initiatives (CESI). After the project restructuring, this Committee was placed directly under the UNEP and dealt with decisions affecting only E+Co which was given the task of handling the CESI component. On the other hand, the decision to manage the consumer credit was left to TNC which created a CC-IG Advisory Committee consisting of 4 advisory group members from various research and development institutes.
139. Apart from the consultative meeting held in 2004 to sort out the differences of the two implementing agencies, there has been no other steering group meetings held anywhere to make policy decisions regarding the project. This could be one of the reasons for the project not establishing any direct communication channel with the relevant Chinese authorities to discuss and overcome the typical bottlenecks faced by the project. The day-to-day project management was left to each individual agency.
140. No assessment can be made on the extent to which the project responded to the mid-term evaluation or review because no such mid-term assessment actually took place (see paragraph 132).
141. The management was able to adapt to the time delays during the life of the project and worked closely with both partners to achieve most of the expected outcomes without any additional cost burden.
142. On the basis of above, the implementation approach can be rated as ***moderately satisfactory***.

J. FINANCIAL PLANNING AND MANAGEMENT

Assess the quality and effectiveness of financial planning and control of financial resources throughout the project's lifetime.

143. **Annex 6** gives a summary of the total budget of the restructured project specifying the contributions by donors as well as the costs of umbrella and sub-projects.
144. The expenditures incurred in 2004 and the revised budget for 2005-2007, as reported in the restructured project document, are shown in **Table 7**.

Table 7. Expenditures in 2004 and the revised budget for 2005-2007

	Budget 2004	Expenditure 2004	Revised budget			Total
			2005	2006	2006	
Umbrella project (UNEP)	48,500	11,500	47,000	49,500	49,667	157,667
Sub-project with TNC	253,250	36,082	391,335	289,613	69,520	786,550
Sub-project with E+Co	417,975	75,856	488,595	478,595	23,213	1,066,259
Cost of project	719,725	123,438	926,930	817,708	142,400	2,010,476
Programme support cost (5%)	35,987	6,172	46,347	40,885	7,120	100,524
Grand total cost of project	755,712	129,610	973,277	858,593	149,520	2,111,000

Source: Project budget summary, as reported in the restructured project document

145. Following the monitoring and reporting procedure included in Section 6 of the project document, the project partners were required to submit details of project expenditures on a quarterly basis in a format specified in Annex 7 of the same document. They were also required to submit a statement of advance of cash provided by UNEP on a quarterly basis. Quarterly reports and selected exchanges of correspondences provided to the evaluators show that both partners submitted their quarterly financial reports along with the statement of advance of cash on a quarterly basis. This allowed the project management to make informed decisions regarding the budget. As the budget allocated for CC-IG support activities and Seed Capital Investment were not engaged by the partners in the earlier years, UNEP revised the budget at the end of each year to the extent possible and reallocated the budget to allow for a proper and timely flow of funds for the payment of satisfactory project deliverables.
146. TNC was supposed to provide a grant of US\$500,000 to the project and from the information made available by TNC, the expected amount was contributed in three installments: US\$100,000 in November 2003, US\$200,000 in March 2005, and US\$200,000 in June 2005. As mentioned in Paragraph 50, TNC also reported having mobilized US\$500,000 from the Bank of America to extend the lending to new villages after the end of the project. And E+Co has mobilized US\$924,899 as co-investment (capital investment and in-kind contribution) for joint ventures with 5 enterprises.
147. Based on the assessment of the financial statements submitted by the project partners and the details of correspondences between the Fund Management Officer and the project

- partners, there is enough evidence to conclude that the project has applied appropriate standards of due diligence in the management of funds.
148. Using the quarterly expenditures submitted by the project partners, the evaluator has compared the budget with actual expenditures and made the following observations. The time taken for E+Co to initiate the consumer credit was longer than expected. In fact, E+Co could invest in joint ventures only from 2007 till just before the closure of the project in April 2008. The reason for this delay has been explained in the half-yearly reports submitted by E+Co. On the other hand, once the agreements were signed for the RCC to serve as the fund manager for the CC-IG component of the project, TNC could engage over 80% of the sub-contract amount in 2005 and 2006. Due to this reason, the annual budgets were revised at the end of both 2005 and 2006.
 149. The amounts of sub-contracts for both the components of the project were slightly higher than the budgeted amount. On the other hand, due to extension of the project duration, both TNC and E+Co had to cover personnel costs with their own resources. Without having access to the details of the overall budget allocated to the budget lines used in the project expenditure account, it is difficult to conclude how the other budget lines fared. It is noted that at the time of closure of the project, both projects had made full use of their allocated budget and there was no cost overrun on the whole.
 150. The loans given to the households in the first round were recovered by the RCCs prior to the closing of the project. In order to allow TNC to expand further the CC-IG component in new villages using the loans recovered from the pilot villages, a "CREED Consumer Credit Continuation and Transition Agreement" was signed between UNEP and TNC in August 2006. This continuation term was valid for a period of two years, from July 2007 to the end of June 2009. The agreement also states that upon termination or expiration of the continuation Term, the GVC Continuation Project shall end, and TNC shall retain the remaining balance of the GVC loan Funds provided that such funds shall be used for alternative energy projects that promote biodiversity conservation in a manner consistent with CREED objectives and TNC's missions. As the agreement states that upon expiration of CREED project, UNEP will no longer administer or report on the consumer credit/income generation project, the evaluator did not get details of the project expenditures beyond the project duration. However, as mentioned in Paragraph 62, during the evaluation mission, TNC reported that the loan recovery rate was low in the last villages and TNC does not intend to initiate any further action until the loan has been fully recovered.
 151. On the other hand, the evaluator did not find any similar agreement signed between UNEP and E+Co for the management of the funds generated through the Seed Capital Investments made in 5 energy enterprises, even 2 years after the completion of the project. The evaluator learnt during the field mission that E+Co had started reinvesting the funds recovered from the investments in the 5 companies by making a second tranche of investment in one of the earlier invested companies in February 2010. The evaluator is of the opinion that similar to the Transition Agreement signed between UNEP and TNC, an agreement should have been signed between UNEP and E+Co that would allow E+Co to retain the remaining balance of the CESI funds provided that such funds shall be used for supporting energy enterprises in a manner consistent with CREED objectives and E+Co's mission in China.
 152. Based on the reports, the evaluator concluded that the project faced some financial difficulty in the first year because of the difference of views of TNC and as a result, the grant amount to be contributed to the project by TNC was not contributed on time. This led to some delays and uncertainties during the early stage of project implementation. However, once all partners of the project sorted out the problem, there were no further issues with the funds.
 153. A breakdown of final actual costs and co-financing for the project is presented in Appendix 7.

154. There was no financial audit conducted for the project. According to the UNEP Fund Management Officer, the Project Document did not include provision for auditing of financial statements at the project level. On the basis of the information available, the financial planning and management can be considered as *satisfactory*.

K. UNEP SUPERVISION AND BACKSTOPPING

Assess the effectiveness of supervision and administrative and financial support provided by UNEP/DTIE.

155. UNEP provided administrative and financial assistance to the project partners all along the project implementation period. The supervision mechanism of UNEP included providing guidance by undertaking field missions, maintaining regular communication and receiving half-yearly reports and quarterly financial reports in time in order to assess the project performance, particularly to achieve the expected outcomes, and take appropriate corrective action. The annual reports of UNEP basically provided a summary of the half-yearly reports submitted by TNC and E+Co. Exchanges of mails between UNEP and the implementing partners during the project implementation are a testimony to the regular supervision of project implementation, particularly to assure timely submission and the accuracy of the technical and financial reports. There were delays in receiving relevant documents required for completing the evaluation because UNEP Project Officer was under the impression that the evaluator would be able to get the requested documents from the partners during the field mission. The evaluator could not however access those documents because the duration of the mission was too short and the main staff members of the partner organizations responsible for the project had moved on to other organizations or activities. .
156. During the initial phase of the project, UNEP was actively involved in sorting out the differences and restructure the project document to suit both the implementing partners. In order to put the project back on track as soon as possible after the interruption of activities in 2004 so that the targeted goals could be achieved in time, UNEP programme officer travelled twice in 2005 to review the progress of the project just after its restructuring and provided field supervision, advice and guidance for the smooth progress of the activities.
157. However, there appear to be some shortfalls in the project implementation following the departure of the responsible officer of UNEP in 2006, notably the absence of a mid-term project evaluation. The evaluator's viewpoint on the importance of a mid-term evaluation has been already expressed in paragraph 139. The new Project Officer undertook a mission in October 2006 to familiarize himself with the project. There was no further field mission of the Project Officer between October 2006 and April 2008 when the project officially ended. Though the UNEP Project Officer believes that a field mission was not justified after October 2006, for the same reason as cited in paragraph 139, a visit to the project by the Project Officer well before the official closure of the project could have been a good occasion to initiate policy dialogue with the national/local stakeholders instead of waiting for that to happen only after the project's closure.
158. As elaborated in paragraph 86, the Project Officer undertook a field mission in September 2008 after the project was officially completed and wrote in the mission report about further inputs to be received from TNC to seek additional donor funding and from E+Co in order to initiate dialogue with Chinese policy stakeholders, "with UNEP catalyzing/orchestrating the needed consultation". E+Co's response to this has been that no one in E+Co is aware of this commitment. Moreover, there is no record of any follow-up by UNEP since the last UNEP mission in September 2008, even though both TNC and E+Co have continued to pursue the CREED activities. For example, as pointed out in Paragraph 150, no discussions have been held

with E+Co regarding the ownership of the recovered Seed Capital Investments. Similarly, there has not been any follow-up on the specific recommendations made in the last mission report of the UNEP Project Officer.

159. The overall evaluation of UNEP supervision and backstopping is rated as ***moderately satisfactory***.

L. COMPLIMENTARITY WITH UNEP MEDIUM TERM STRATEGY AND PROGRAMME OF WORK

Present a brief narrative to UNEP's expected accomplishments, project contributions that are in-line with Bali Strategic Plan, and South-South Cooperation.

160. The project makes a tangible contribution to at least two of the six thematic focal areas of UNEP Medium Term Strategy.
161. Through this project, UNEP is supporting China to make a transition towards societies based on more efficient use of energy, energy conservation and utilization of cleaner energy sources, with a focus on renewable energy so that increased carbon sequestration occurs through reduced deforestation. The project is aimed at supporting China to make sound policy, technology, and investment choices that lead to a reduction in greenhouse gas emissions and potential co-benefits, with a focus on clean and renewable energy sources, energy efficiency and energy conservation. The CC-IG component will facilitate the penetration of clean energy in poor rural households, thus reducing their need for fuel wood and providing them better livelihood opportunities.
162. Through this project, UNEP has tried to promote the application of environmentally sound technologies and integrated waste management that will lead to more efficient use of resources. The project contributes to resource efficiency and reduced pollution through the activities of the EDS component that is aimed at assisting clean energy enterprise development and supporting the private sector to invest in efficient, clean and safe industrial production.
163. The project contributions are also in line with the Bali Strategic Plan (BSP) as through the project, UNEP is enhancing delivery of technology support and capacity-building to China based on best practices from both within and outside UNEP. It also addresses the poverty and environment issue, including the implementation of the poverty reduction strategy programme in the form of consumer credit for initiating income generation activities that in turn can make ownership of clean energy technologies affordable to the poor rural population. And through the EDS component, the project is promoting, facilitating and financing access to and support of environmentally sound technologies and corresponding know-how.
164. As far as fostering South-South cooperation is concerned, the project implementers participated in relevant national and regional forums and workshops to share the project experience. Moreover, the local unit of E+Co established in China benefited from the experience of E+Co's on-going projects and activities in South-East Asia, mainly Thailand and Cambodia. On the other hand, no concrete initiatives were taken by the project to foster South-South cooperation.
165. Though the project has not triggered any South-South cooperation so far, it does have a high replication potential among many other developing countries where a vast rural population depends solely on traditional biomass as the main source of energy. Unfortunately, so far the project has not had any visible policy impact in China that would strengthen public-private partnership and facilitate the adoption of the CC-IG model which is certainly more sustainable

in the long run than the subsidy model that is adopted in many developing countries. It should however be noted that E+Co shared its experience of supporting and financing bio-energy enterprises in Cambodia and Thailand in order to attract the attention of all companies with potential for developing bio-energy in China.

V. CONCLUSIONS AND RATING

A. Conclusion

166. The China Rural Energy Enterprise Development (CREED) project was a very good initiative to demonstrate the manner in which the Chinese Government could make sound policy, technology and investment choices, leading to the penetration of clean energy in poor rural households, reducing their need for fire wood and providing them with better health and livelihood opportunities. The project has also shown the manner in which private sector could be nurtured and provided financial support to develop energy business and offer a variety of energy services, specifically to rural communities.
167. In spite of the fact that the project was practically split in two separate interventions at an early stage and the partners decided to part ways and take up activities independently, the project has achieved much of the planned outputs.
168. In the absence of any strong local partner who could initiate enterprise development services, E+Co created a local entity with the sole purpose of providing a package of services designed to nurture the private sector energy enterprises, and capital to assist them in expanding their businesses.
169. The initial focus of the CESI component was to concentrate on the development of commercially viable local renewable energy enterprises that can offer alternative energy services to rural communities. The project however faced some institutional and regulatory hurdles which obliged the implementing team to widen the scope of activity and include promotion of renewable energy applications in industrial premises. During the period of the project implementation, CESI was able to create 5 successful partnerships and leveraged financial resources from the partnering enterprises to create new joint ventures.
170. During the implementation of the CC-IG component in partnership with local government departments and a network of Rural Credit Cooperatives, TNC was able to test 4 different business models of establishing consumer credit programs aimed at extending consumer credits to poor rural households, providing them practical training and exposure so that they could initiate productive activities for generating adequate income to pay off the debt and afford alternative energy technologies. By the time of the official closing of the project, 575 poor households from 5 selected villages located in remote areas had benefited from this service and the loan recovery rate was 100% with the exception of one village. The funds recovered have allowed TNC to extend similar services to another 293 households in 5 action sites.
171. During the execution of the CC-IG component of the project, TNC cooperated with local government agencies such as forestry, poverty alleviation and civil affairs bureaus to leverage government funds for both consumer credit and related income generation and training/capacity building activities. TNC was also instrumental in establishing village associations to coordinate and assist the project implementation and loan recovery in the villages.
172. While the project has reached most of the expected outputs outlined in the logframe, there are still some hurdles to be overcome in order for the project to achieve its ultimate goal.
173. In spite of the liberalization in various sectors of the economy, Chinese regulations for foreign investments are still very restrictive and complex. Chinese government has a strong policy for

renewable energy development for the rural population and large subsidies are provided to State-owned enterprises for poverty alleviation purposes, thus leaving very little scope for small private players in the off-grid clean energy businesses. Moreover, it is relatively difficult to identify business partners who have transparent business practices. There is a need for government policies to become more conducive to market driven business strategies and support extended to smaller private enterprises. On the other hand, enterprises need to adopt more accountable and transparent business practices to fully take advantage of enterprise development support. These two factors will help the Government to move away from subsidizing State-owned companies to adopting policy to improve professionalism among private players interested in renewable energy technology and services.

174. While government departments have learnt considerably by participating in the project and appreciated the positive benefits, they are unlikely to change the existing practices unless the central Government formulates policy to avoid duplication of efforts and create greater synergy among the various government sponsored schemes such as poverty alleviation, promotion of alternative energy and environmental protection. Local government departments can then interact closely with the network of Rural Credit Cooperatives to restructure the existing credits from line ministries and adopt the CREED CC-IG model to achieve the ultimate goals more sustainably.
175. The central Government's annual subsidies now allocated separately for poverty alleviation, renewable energy promotion and deforestation programmes implemented without any coordination among them can then be channeled through the CREED model to reach greater number of beneficiaries because much of the funds allocated as consumer credit can be recovered over a period of time and serve as a revolving fund.
176. The successful achievement of the above intermediate states is a necessary condition for the ultimate success of the project that is aimed at helping the rural households depend less on fire wood, thereby improving their health and reducing the pressure on local forests.
177. Lastly, it is imperative to put in place a monitoring mechanism to assess the effectiveness of the programme in improving the quality of life of the rural population and reducing the use of fuel wood as these are important parameters to gauge the success of the overall programme.
178. The ratings of the various evaluation aspects related to project implementation are summarized in the following section.

B. Table of rating

Criterion	Evaluator's Summary Comments	Evaluator's Rating
A. Attainment of project objectives and results (overall rating) Sub criteria (below)		Moderately satisfactory
A. 1. Effectiveness - overall likelihood of impact achievement (ROTI rating)	Project has proved that it is possible to expand the access to clean energy technologies to poorer households in remote rural areas. Only 2 (target: 10-14) commercially viable businesses offering clean energy services to rural communities, due to institutional/regulatory constraints and cultural values. Rural Credit Cooperatives involved in providing energy-linked consumer credit but no external financial support to the clean energy sector could be mobilized. Government support to the approach combining private sector services and consumer credit remains weak. No systematic data on fire wood use reductions.	Moderately satisfactory

China Rural Enterprise Development Programme (CREED)

Criterion	Evaluator's Summary Comments	Evaluator's Rating
A. 2. Relevance	The project addresses issues specified by WSSD Plan of Implementation, meets the objectives set by the Agenda 21, its outcomes support UNFCCC goals, and it responds well to several UNEP Governing Council decisions.	Satisfactory
A. 3. Efficiency	Most of the outputs expected of the project have been achieved cost-effectively in spite of several hurdles faced and some reasonable time delay in execution. Staffing and operational costs were on the high side because of international staff, capacity building needs and travel distances, but credit and investment capital significantly increased by co-financing provided/mobilized by TNC and E+Co.	Satisfactory
B. Sustainability of Project outcomes (overall rating) Sub criteria (below)		Moderately unlikely
B. 1. Financial	Funds are available and there are local institutions but what is missing is the appropriate policy to bring in synergies among the players and optimizing the use of funds.	Moderately likely
B. 2. Socio Political	No policy initiatives taken so far at the local or the national level to achieve the intended impacts. The governmental "subsidy" approach boycotts the "affordable credit" approach.	Moderately unlikely
B. 3. Institutional framework and governance	Government framework promotes the subsidy model and there is lack of coordination among various Local Government Departments.	Moderately unlikely
B. 4. Environmental	Chinese Government is fully aware of the problems associated with deforestation and recognizes the important role of renewable energy.	Likely
C. Catalytic Role	While there are project champions who have played catalytic roles, there is lack of appropriate policies to support institutional changes and ensure sustainable financing.	Moderately satisfactory
D. Stakeholders involvement	The project made a lot of efforts to involve rural households, clean energy enterprises and the RCC. All stakeholders involved in the project have taken their roles seriously throughout the implementation of the project. It also built stakeholder awareness, mostly at the local level, though multiple media.	Satisfactory
E. Country ownership / driven-ness	CREED project is relevant to national development and environmental agendas but no policy adopted to scale up CREED and Inadequate resources allocated or incentives created by Chinese authorities to realize their biodiversity commitments.	Moderately satisfactory
F. Achievement of outputs and activities	Most project outputs defined in the log frame have been achieved through the activities undertaken during project implementation.	Satisfactory
G. Preparation and readiness	The project implementation was delayed partly due to conflicts between project partners and due to underestimation of the time needed to implement some of the activities. No formal government partners in the project may be major cause for lack of influence on government policy & strategy, and absence of a local partner to	Moderately unsatisfactory

China Rural Enterprise Development Programme (CREED)

Criterion	Evaluator's Summary Comments	Evaluator's Rating
	replicate project model.	
H. Assessment of Monitoring and Evaluation (overall rating) Sub criteria (below)		Moderately satisfactory
H. 1. M&E Design	The M&E design seems to have been in place and was revised on the basis of the feedback received from the implementing partners	Satisfactory
H. 2. M&E Plan Implementation (use for adaptive management)	Project M&E system was in place and regular reporting helped to fine tune program activities; however no mid-term review was conducted even though it would have been useful to attract attention on need for policy dialogue.	Moderately satisfactory
H. 3. Budgeting and Funding for M&E activities	Funds were allocated in the budget for M&E activities; however budget seemed inadequate for in-depth evaluation, particularly the limited time for field mission	satisfactory
I. Implementation approach	Project concept is very interesting and innovative for China. Management adapted to time delays and worked closely to achieve most outputs without additional cost burden; no coordination between TNC and E+Co after the project restructuring. No Steering Committee.	Moderately satisfactory
J. Financial planning	Apart from the non-engagement of funds in the pilot activities during the initial phase of the project, financial planning was done every year on the basis of the project performance. Project partners applied appropriate standards of due diligence in the management of funds.	Satisfactory
K. UNEP Supervision and backstopping	UNEP provided administrative and financial support, sorted out the differences during the initial phases and restructured the project to suit both partners. Some deficiencies were noted in monitoring and providing guidance during the later part of the project; moreover, no follow-up initiatives have been taken after the end of the project to influence policy making of the Government	Moderately satisfactory

VI. LESSONS LEARNED

179. The CREED project is exemplary in showcasing a model for financing projects that have the multiple objectives of alleviating poverty, providing income generating opportunities to poor rural households, accelerating the adoption of renewable energy technologies, improving human health and protecting the environment. It has also demonstrated how small and fledgling private enterprises can be nurtured, guided and financially supported so that they can develop a new vision to widen the sphere of their alternative energy business, with a specific focus to satisfying the needs of rural end-users.

Lesson 1: Engaging in policy dialogue with relevant stakeholders to ensure larger impact

180. There is a need for government policies to become more conducive to market driven business strategies and support extended to smaller private enterprises. On the other hand, enterprises need to adopt more accountable and transparent business practices to fully take advantage of enterprise development support. These two factors will help the Government to move away from subsidizing State-owned companies towards adopting policy to improve professionalism among private players interested in renewable energy technology and services.
181. It was noted that while local government departments took active part in the project by extending financial and technical support for the alternative energy installation, income generation and capacity building activities in the communities, their participation was well within the limit of their business-as-usual activities. They, on their own, are unlikely to look for synergy to make the best use of the funds made available through the various targeted programs initiated by the higher authorities at the central government level. While government departments have learnt considerably by participating in the project and appreciated the positive benefits, they are unlikely to change the existing practices unless the central Government formulates policy to avoid duplication of efforts and create greater synergy among the various government sponsored schemes such as poverty alleviation, promotion of alternative energy and environmental protection. Local government departments can then interact closely with the network of Rural Credit Cooperatives to restructure the existing credits from line ministries and adopt the CREED CC-IG model to achieve the ultimate goals more sustainably.
182. The central Government's annual subsidies now allocated separately for poverty alleviation, renewable energy promotion and deforestation programmes implemented without any coordination among them can then be channeled through the CREED model to reach greater number of beneficiaries because much of the funds allocated as consumer credit can be recovered over a period of time and serve as a revolving fund.
183. The successful achievement of the above intermediate states is a necessary condition for the ultimate success of the project that is aimed at helping the rural households depend less on fire wood, thereby improving their health and reducing the pressure on local forests.

Lesson 2: Importance of official involvement of national/local institutional stakeholders as project partners

184. One major drawback of the project was not to involve/include any Chinese public and private stakeholders as official partners of the project. Then the project could have expected to get much greater support in overcoming some of the bottlenecks faced during its execution and also in initiating more effective policy dialogue with relevant decision makers either at the central or at the local government level. After all, the means available for the pilot were rather limited and the outcomes of the project could only be widely replicated if there was

buy-in of the public decision makers who have the resources and means to mainstream the CREED model.

185. While there can be no critique of the CREED model as such or the choice of project implementation partners who have impeccable record of social contribution, it would appear that the project formulation was more “donor-driven” because at no point of time there has been a significant involvement of the national institutional counterparts during project design and implementation.
186. There is repeated mention in the various reports that the Chinese regulations are complex and restrictive in nature and more time should have been allocated for finding a suitable partner for seed capital investment. On the other hand, the Chinese Government is serious in addressing the issues of poverty alleviation and renewable energy development but has adopted the large scale subsidy option which is not conducive for the growth of small private players in a market-driven environment. Such problems could have been more effectively tackled if the project could have managed to involve relevant government stakeholders as official partners of the project during its development phase. Then it would have been relatively easier to initiate policy level dialogue with the institutional partner to overcome some of the bottlenecks and achieve some degree of positive evolution.

Lesson 3: Criteria for the choice of supporting partners and need for adopting project goals to match with the reality

187. The project suffered delay in the first year due to the change of view of one of the implementing partners. This is explained by the fact that the selection of implementing partners should not only be based on the technical expertise but also on the conviction of the proposed partner to deal with the existing barriers and the willingness to cooperate. Secondly, once the rift between the two implementing partners was obvious and irrevocable, and E+Co had also tested the ground to decide to widen the scope of activity and include the promotion of large-scale renewable energy in industry, it would have been wiser to split the project into two distinct components without emphasizing that TNC will coordinate with the E+Co team to benefit from the EDS component of the project. In the absence of any interaction between TNC and E+Co, the EDS activity has in no way facilitated the acquisition of alternative energy technologies by the rural end-users who participated in the CC-IG component.

Lesson 4: Setting realistic targets and time frame for project implementation

188. The delay in project implementation was inevitable because the time frame for project implementation was unrealistic. As explained in the Paragraph 115, it would appear far-fetched to expect the poor households located in remote villages to develop the competence to be engaged in activities that would provide them sufficient income to not only pay back the loan but also afford the acquisition of (subsidized) renewable energy products/devices within a short span of 18 months. Much of the business in which these households can be engaged is seasonal in nature and market linkage for selling such products is not always easy unless there is a suitable mechanism put in place to facilitate the sale of the produce.

Lesson 5: Drafting contractual agreements that prevents conflicts of interests

189. The project activities in the initial phase were hampered due to lack of funds as one of the project partners who also happened to be co-financier in the project did not contribute its share to the project because of disagreement in the way the project had to be implemented. To avoid such situation, it is perhaps important that the contractual agreement for co-financing be drafted carefully as part of the design process to prevent any conflict of interest or veto power of the co-financier over the project.

Lesson 6: Involvement of the project implementing agency throughout the project duration

190. Frequent communication between implementing agency and supporting partners was effective in identifying outreach opportunities and potential cooperation with local organizations. It was also observed that flexible implementation strategies based on mutual trust between the implementing agency and supporting partners ensure better identification of potential opportunities and risks, resulting in more effective project implementation. However, at some point, perhaps when there was a change of UNEP Project Officer, there seems to have been a break in continuity during the later part of the project. While the project partners were too busy to ensure that they achieve the expected outcomes, not much advisory support seems to have been given by UNEP to put in place an exit strategy and initiate policy dialogue with local and national government representatives. As a result, the good practice demonstrated by the CREED project has not resulted in any concrete policy initiatives and involvement at the government decision-making level which could ensure the scaling up of the intended impacts at the provincial or national level. It is therefore essential to ensure the project implementing agency plays a more pro-active role not only to keep track of the administrative and financial obligations of the project but also to develop timely exit strategies and policy dialogue /advocacy support for ensuring the intended impacts at a much wider level.

Lesson 7: M&E

191. Lastly, project monitoring should have provided data on the effectiveness of the project in improving the quality of life of the rural population and in reducing the use of fuel wood as these are important parameters to gauge the success of the overall programme. This data should have been gender disaggregated to the extent possible.

VII. RECOMMENDATIONS

192. The CREED project has been successful in demonstrating that all stakeholders in the project are ultimately the winners. Hence it will be a great pity if the project does not achieve its ultimate intended impacts. The following recommendations are addressed to UNEP:
193. **Recommendation 1:** Conduct further research and documentation of the CREED model in order to capitalize the experience better and to widely disseminate in other developing countries through various existing channels of the different UN agencies at the national and regional levels.
194. **Recommendation 2:** To achieve the ultimate impact, several impact drivers have been identified in the project's ROtI analysis (see **Annex 8**). The project supporting partners have contributed immensely to the successful implementation of the CREED model and continue to pursue the activities at a pilot intervention level. However, if the ultimate objective is to scale up the CREED model at the national or at the regional level, UNEP needs to strengthen its policy dialogue with national stakeholders who support the various development and environment protection programs, so that a consensus can be built to phase out costly and unsustainable subsidy-based support to technology dissemination in favor of the more sustainable, inclusive and efficient CC-IG approach.
195. **Recommendation 3:** Similar to the CC-IG Continuation and Transition Agreement signed between UNEP and TNC, UNEP should sign an agreement with E+Co in order to allow the latter to retain the remaining balance of the CESI funds provided that such funds shall be used for projects that promote alternative energy enterprise development in a manner consistent with CREED objectives and E+Co's mission.

VIII. ANNEXES

1. **The Evaluation Terms of Reference**
2. **A list of interviewees, and evaluation timeline**
3. **A list of documents reviewed/consulted**
4. **Communication and outreach activities of the project team**
5. **Planned activities and implementation time-frame**
6. **Performance of the E+Co CREED portfolio (as of August 2010)**
7. **Summary of co-finance information and a statement of project expenditure by activity**
8. **Details of the project's "impact pathways" and the "ROtI" analysis**
9. **The expertise of the evaluator**

A.1 THE EVALUATION TERMS OF REFERENCE

Terminal Evaluation of the UNEP project

“China Rural Energy Enterprise Development (CREED): MT/4040-03-01 (5062)”

1. Project Background and Overview

Project rationale

Improvement of rural energy service provision may be considered an achievement of multiple environmental benefits. The China Rural Energy Enterprise Development (CREED) Project is critical in enhancing testing of enterprise development and seed financing for clean energy entrepreneurs in developing countries, aimed at altering deforestation of large parts of the rural areas, sustainable conservation of biodiversity and management of global climate change through the net release of greenhouse gases. Although reducing carbon emissions is now a worldwide task, China is among the world's biggest emitters of CO₂. Therefore, the development path of China's economy with all its social and economic implications cannot be disconnected from the issue of global climate change.

In conformity with the Environmental Management Agreements (EMAs), which emphasize the need to build on multi-efforts within the implementing agencies for the common good, and given the complexity of energy service provision, the CREED was implemented by UNEP in partnership with The Nature Conservancy (TNC) and E+Co. UNEP's contribution includes developing and testing approaches that help identify and remove barriers to accessing energy, particularly where the energy service provided is better for the environment. These activities fall into UNEP's programme areas of (i) renewable energy and finance; and (ii) energy and transport policy.

The CREED targets ethnic minorities who are generally poorer, with lower economic development levels. Current methods of meeting rural energy needs in the Yunnan region also have large, direct, and adverse consequences for millions of poor people. The rigours of collecting fuel wood fall disproportionately on women and children while the use of open fires leads to poor indoor air quality and, consequently, high levels of respiratory ailments and diseases. Indoor coal briquette use is also common. These practices act as a drag on rural development and contribute to the general poverty of Yunnan inhabitants.

The objective of the CREED was “To promote access to energy among low income groups in the northwest part of Yunnan and neighbouring areas in Western China by providing enterprise development services and seed financing for clean energy businesses”.

The indicators given in the project document for this stated objective were:

- Commercially viable enterprises offering a variety of energy services to rural communities;
- Financial support to the clean energy business sector coming from local, national and international financial institutions;
- Government actively supporting approaches to meeting rural energy needs that rely on a combination of private sector delivery of sustainable rural energy services and extension of clean energy-related consumer credit to rural communities;
- Rural poor consumption of firewood reduced and thereby health improvement realized and pressure on local forests reduced;

Relevance to UNEP Programmes

This project is in line with UNEP sub-Programme on Technology, Industry and Economics with sub-programme elements of Energy and Ozone action. The CREED specifically supports projects which combine the protection of forest cover while at the same time minimizing climate change, and deterioration of human health. The CREED seeks to create a sustainable energy development path which, among others, will include broader shifts regarding energy and development that are underway in China and redirecting existing sources of finance and support so as to achieve sustainable goals of energy service provision.

In addition, the CREED is relevant to different environmental legislations, including:

- Agenda 21, chapter 38 – creating capacity for sustainable development;
- UNEP GC 16/33 – promoting ways and means to facilitate access to Environmentally Sound Technologies (ESTs).
- UNEP GC 16/41 – assisting developing countries in identifying climate friendly technologies and technology needs;
- UNEP GC 20/29 – policy and advisory services in the key area of economics, trade and financial services.

Executing Arrangements

This project was jointly implemented by The Nature Conservancy (TNC), Yunnan Representative Office and E+Co, under the overall management of UNEP's Division of Technology, Industry and Economics (DTIE). The roles and responsibility for each implementing partner were clearly spelt out.

E+Co played a key role in the projects enterprise development and other financial elements including seed capital investment. TNC was responsible for local coordination of project components and securing of local support. Both E+Co and TNC worked together on capacity development and management of the project team.

The project team closely worked with local organizations in implementing approved activities. It was within the mandate of implementing partner institutions to provide necessary managerial and technical support to the project.

Project Activities

The project comprised of different activities grouped in the following five components:

Component 1: Project preparation

- Delineating the project area in NW Yunnan;
- Identifying and evaluating related renewable energy initiatives and past experience and lessons on micro-credit;
- Organizing and conducting energy business 'concept exposure' workshops for entrepreneurs, and public and private institutions;
- Identifying income generation opportunities linked to renewable energy applications;
- Consulting local finance institutions and government agencies, and developing a co-financing strategy;
- Conducting feasibility assessment regarding investing in enterprises and consumer credit – income generation opportunities;
- Determining how project funds can best be used to leverage other sources of micro-finance;

- Reaching firm partnership arrangements and possible operational agreements with local entrepreneurs, additional local NGO counterpart(s) and local micro-finance institution counterpart(s);
- Preparing the detailed full project work-plan

Component 2: Capacity Building

Activities under this component included:

- Develop skills of CREED team based in Yunnan to enable investment structuring and management, including the identification of entrepreneurs and initial enterprise pipeline development;
- Develop skills and procedures to convert clean energy-related consumer finance, micro enterprise and income generation opportunities into reality;
- Translate and adapt 'REED' Finance Professional Toolkit for the Chinese market and development to local conditions;
- Organize and conduct workshops for entrepreneurs, intermediary organizations, financial institutions and others;
- Work with various government agencies on policy and programme reforms and project implementation in the targeted areas that promote or favour alternative energy options and support CREED projects;
- Provide technical support and information regarding best practices on alternative energy options and income generation opportunities.

Component 3: Enterprise Development

Respective activities included:

- Translate and adapt "REED' Energy Entrepreneur 'Toolkit' for the Chinese market and development context;
- Implement Enterprise Development Services (EDS) and investment review process;
- Build an enterprise pipeline (goal 60-80 enterprises);
- Provide enterprise development services to 30 or more selected entrepreneurs and post-investment services to help investee companies grow;
- Provide CREED seed capital to 8-10 rural energy enterprises, and growth capital to 5-6 enterprises;
- Secure \$0.6-\$1.2 million of CREED Seed Capital co-investment from local, regional, national, and international financial institutions and others, and up to \$3.0 million in overall;
- Create efficient operational and co-investment procedures and structures for the CREED Seed Capital;
- Establish the CREED Seed Capital as a freestanding entity fully capable of attracting co-investment.

Component 4: Consumer Credit, Micro Enterprise and Income Generation

Planned key activities included:

- Implement operational procedures for Consumer Credit, Micro Enterprise and Income generation portion;
- Create new or expand existing local partners for Consumer Credit and Income Generation Component;

- Secure additional financing for provision of Consumer Credit and Income generation Support;
- Through partners, start extending CREED Consumer Credit for alternative energy, micro enterprise and income generating activities;
- Provide on-going support, monitoring, evaluation and asset management to Consumer Credit, Micro Enterprise and Income Generation partner organization.

Component 5: Communication, Dissemination and Outreach

- Prepare a CREED communication strategy for local, national and international audiences;
- Share CREED experience with local and national governments, UN and donor agencies, development agencies, foundations etc;
- Publish about 20 articles on the CREED project, both to national and international audiences, with focus on i) business, ii) development, iii) energy/climate change policy audiences;
- Present CREED programme and projects at international meetings; when practical assist local entrepreneurs and partners attend/present at these events;
- Prepare /disseminate project status reports.

Budget

At project inception the following budget was prepared:

	<u>UNF</u>	<u>Co-funding</u>
Phase I and II	\$ 2, 111,000	3,200,000
TOTAL (projected cost)	\$ 5,311,000	

Co-funding sources included: TNC (\$ 500,000), W. Alton Jones Foundation (\$200,000) through the UNF, UNEP (\$100,000, in-kind), E+Co (\$100,000) and \$ 3,000,000 co-financing CREED sought to obtain.

TERMS OF REFERENCE FOR THE EVALUATION

1. Objective and Scope of the Evaluation

The objective of this terminal evaluation is to examine the contribution of the CREED project towards the achievement of Expected Accomplishments and the extent, and magnitude of any project impacts to date. The evaluation will also determine the likelihood of future impacts; assess project performance and the implementation of planned project activities / outputs against actual results. The evaluation will focus on the following main questions:

- Did the project establish commercially viable enterprises offering a variety of energy services to rural communities?
- To what extent did the project articulate financial options for support to the clean energy business sector?
- To what extent has the government actively supported approaches to meeting rural energy needs that rely on a combination of private sector delivery of sustainable rural energy services and extension of clean energy-related consumer credit to rural communities?

- Has the project contributed to reduction of rural poor consumption of firewood and thereby realized health improvement while reducing pressure on local forests?

2. Methods

This terminal evaluation will be conducted as an in-depth evaluation using a participatory mixed-methods approach, during which the UNEP Programme / Project Manager, key representatives of the executing agencies and other relevant staff are kept informed and consulted throughout the evaluation. The consultant will liaise with the UNEP Evaluation Office and the responsible UNEP Officer on any logistic and/or methodological issues to properly conduct the review in as independent a way as possible, given the circumstances and resources offered. The draft report will be delivered to the Evaluation Office and circulated to UNEP Programme / Project Manager, key representatives of the executing agencies. Any comments or responses to the draft report will be sent to the UNEP Evaluation Office for collation and the consultant will be advised of any necessary or suggested revisions.

The findings of the evaluation will be based on multiple approaches:

1. A desk review of project documents including, but not limited to:
 - (a) The project documents, outputs, monitoring reports (such as progress and financial reports to UNEP) and relevant correspondence.
 - (b) Notes from the Project Team meetings.
 - (c) Other project-related material produced by the project staff or partners.
 - (d) Relevant material published on the project web-site.
2. Interviews with project management and technical support.
3. Face-to-face and telephone interviews with intended users for the project outputs and other stakeholders involved with this project, including the participating countries and international bodies. The Consultant shall determine whether to seek additional information and opinions from representatives of donor agencies and other organisations. As appropriate, these interviews could be combined with an e-mail questionnaire, online survey, or other electronic communication.
4. Interviews with the UNEP Project / Programme Manager and Fund Management Officer, and other relevant staff in UNEP dealing with rural energy enterprise development, biodiversity and climate change-related activities as necessary. The Consultant shall also gain broader perspectives from discussions with other relevant UNEP staff.
5. Field visits to project staff and target audiences. The evaluator will make field visits to NW Yunnan area and to key project personnel and collaborators in China. A visit will also be made to key audiences for the project's outputs, who will be canvassed for their opinions in relation the project in these countries.

Key Evaluation principles

In attempting to evaluate any outcomes and impacts that the project may have achieved, evaluators should remember that the project's performance should be assessed by considering the difference between the answers to two simple questions "what happened?" and "what would have happened anyway?". These questions imply that there should be consideration of the baseline conditions and trends in relation to the intended project outcomes and impacts. In addition it implies that there should be plausible evidence to attribute such outcomes and impacts to the actions of the project.

Sometimes, adequate information on baseline conditions and trends is lacking. In such cases this should be clearly highlighted by the evaluator, along with any simplifying assumptions that were taken to enable the evaluator to make informed judgements about project performance.

3. Project Evaluation Parameters and Ratings

The success of project implementation will be rated on a scale from 'highly unsatisfactory' to 'highly satisfactory'. In particular the evaluation shall assess and rate the project with respect to the eleven categories defined below .

It should be noted that many of the evaluation parameters are interrelated. For example, the 'achievement of objectives and planned results' is closely linked to the issue of 'sustainability'. Sustainability is understood as the probability of continued long-term project-derived outcomes and impacts and is, in turn, linked to the issues of 'catalytic effects / replication' and, often, 'country ownership' and 'stakeholder participation'.

A. Attainment of objectives and planned results:

The evaluation should assess the extent to which the project's major relevant objectives were effectively and efficiently achieved or are expected to be achieved and their relevance. Any project contributions to the achievement of UNEP Expected Accomplishments should be clearly highlighted.

- **Effectiveness:** Evaluate the overall likelihood of impact achievement, taking into account the "achievement indicators", the achievement of outcomes and the progress made towards impacts. UNEP's Evaluation Office advocates the use of the Review of Outcomes to Impacts (ROtI) method (described in Annex 7) to establish this rating. The analysis should specify whether the project has plausible causal pathways that link project activities to the achievement of Expected Accomplishments. It should also specify whether the intervention is likely to have any lasting differential impacts in relation to gender.
- **Relevance:** In retrospect, were the project's outcomes consistent with those of the programme frameworks and thematic sub-programmes? Ascertain the nature and significance of the contribution of the project outcomes to the CBD and the UNFCCC and other UNEP thematic sub-programmes. To what extent does the project intervention link to the achievement of the MDGs (in particular Goal 7)?
- **Efficiency:** Was the project cost effective? Was the project the least cost option? Was the project implementation delayed and if it was, then did that affect cost-effectiveness? Assess the contribution of cash and in-kind co-financing, and any additional resources leveraged by the project, to the project's achievements. Did the project build on earlier initiatives; did it make effective use of available scientific and / or technical information? Wherever possible, the evaluator should also compare the cost-time vs. outcomes relationship of the project with that of other similar projects.

B. Sustainability:

Sustainability is understood as the probability of continued long-term project-derived outcomes and impacts after the project funding ends. The evaluation will identify and assess the key conditions or factors that are likely to contribute or undermine the persistence of benefits after the project ends. Some of these factors might be outcomes of the project, e.g. stronger institutional capacities or better informed decision-making. Other factors will include contextual circumstances or developments that are not outcomes of the project but that are relevant to the sustainability of outcomes. The evaluation should ascertain to what extent follow-up work has been initiated and

how project outcomes will be sustained and enhanced over time. Application of the ROTI method described in Annex 7 will also assist in the evaluation of sustainability.

Five aspects of sustainability should be addressed: financial, socio-political, institutional frameworks and governance, environmental (if applicable). The following questions provide guidance on the assessment of these aspects:

- Financial resources. Are there any financial risks that may jeopardize sustenance of project outcomes and onward progress towards impact? What is the likelihood that financial and economic resources will not be available once the project funding ends (resources can be from multiple sources, such as the public and private sectors, income generating activities, and trends that may indicate that it is likely that in future there will be adequate financial resources for sustaining project's outcomes)? To what extent are the outcomes and eventual impact of the project dependent on continued financial support?
- Socio-political: Are there any social or political risks that may jeopardize sustenance of project outcomes and onward progress towards impacts? What is the risk that the level of stakeholder ownership will be insufficient to allow for the project outcomes to be sustained? Do the various key stakeholders see that it is in their interest that the project benefits continue to flow? Is there sufficient public / stakeholder awareness in support of the long term objectives of the project?
- Institutional framework and governance. To what extent is the sustenance of the outcomes and onward progress towards impacts dependent on issues relating to institutional frameworks and governance? What is the likelihood that institutional and technical achievements, legal frameworks, policies and governance structures and processes will allow for, the project outcomes/benefits to be sustained? While responding to these questions consider if the required systems for accountability and transparency and the required technical know-how are in place.
- Environmental. Are there any environmental risks that can undermine the future flow of project environmental benefits? The TE should assess whether certain activities in the project area will pose a threat to the sustainability of the project outcomes. For example; construction of dam in a protected area could inundate a sizable area and thereby neutralize the biodiversity-related gains made by the project; or, a newly established pulp mill might jeopardize the viability of nearby protected forest areas by increasing logging pressures; or a vector control intervention may be made less effective by changes in climate and consequent alterations to the incidence and distribution of malarial mosquitoes. Would these risks apply in other contexts where the project may be replicated?

C. Catalytic Role and Replication

The catalytic role of UNEP is embodied in its approach of supporting the creation of an enabling environment, investing in activities which are innovative and show how new approaches and market changes can work, and supporting activities that can help upscale new approaches to a national (or regional) level to sustainably achieve global environmental benefits.

In general this catalytic approach can be separated into three broad categories of activities: (1) "foundational" and enabling activities, focusing on policy, regulatory frameworks, and national priority setting and relevant capacity (2) demonstration activities, which focus on demonstration, capacity development, innovation, and market barrier removal; and (3) investment activities (rarely if ever undertaken exclusively by UNEP) with high rates of co-funding, catalyzing investments or implementing a new strategic approach at the national level.

In this context the evaluation should assess the catalytic role played by this project by consideration of the following questions:

- **INCENTIVES:** To what extent have the project activities provided incentives (socio-economic / market based) to contribute to catalyzing changes in stakeholder behaviours?
- **INSTITUTIONAL CHANGE:** To what extent have the project activities contributed to changing institutional behaviors?
- **POLICY CHANGE:** To what extent have project activities contributed to policy changes (and implementation of policy)?
- **CATALYTIC FINANCING:** To what extent did the project contribute to sustained follow-on financing from Government and / or other donors? (this is different from co-financing)
- **PROJECT CHAMPIONS:** To what extent have changes (listed above) been catalyzed by particular individuals or institutions (without which the project would not have achieved results)?

(Note: the ROtI analysis should contribute useful information to address these questions)

Replication approach, in the context of UNEP projects, is defined as lessons and experiences coming out of the project that are replicated or scaled up in the design and implementation of other projects. Replication can have two aspects, replication proper (lessons and experiences are replicated in different geographic area) or scaling up (lessons and experiences are replicated within the same geographic area but funded by other sources).

Is the project suitable for replication? If so, has the project approach been replicated? If no effects are identified, the evaluation will describe the strategy / approach adopted by the project to promote replication effects.

D. Stakeholder participation / public awareness:

This consists of three related and often overlapping processes: information dissemination, consultation, and “stakeholder” participation. Stakeholders are the individuals, groups, institutions, or other bodies that have an interest or stake in the outcome of the UNEP project. The term also applies to those potentially adversely affected by a project. The evaluation will specifically:

- Assess the mechanisms put in place by the project for identification and engagement of stakeholders in each participating country and establish, in consultation with the stakeholders, whether this mechanism was successful, and identify its strengths and weaknesses.
- Assess the degree and effectiveness of collaboration/interactions between the various project partners and institutions during the course of implementation of the project.
- Assess the degree and effectiveness of any various public awareness activities that were undertaken during the course of implementation of the project.

E. Country ownership / driven-ness:

This is the relevance of the project to national development and environmental agendas, recipient country commitment, and regional and international agreements. The evaluation will:

- Assess the level of country ownership. Specifically, the evaluator should assess whether the project was effective in providing and communicating information on rural energy enterprise development that catalyzed action in the participating country to improve decisions relating to the conservation and management of forests.
- Assess the level of country commitment to the generation and use of research related to carbon storage and biodiversity conservation during and after the project, including in regional and international fora.

F. Achievement of outputs and activities:

- Delivered outputs: Assessment of the project's success in producing each of the programmed outputs, both in quantity and quality as well as usefulness and timeliness.
- Assess the soundness and effectiveness of the methodologies used for developing the technical documents and related management options in the participating countries
- Assess to what extent the project outputs produced have the weight of scientific authority / credibility, necessary to influence policy and decision-makers, particularly at the national level.

G. Preparation and Readiness

Were the project's objectives and components clear, practicable and feasible within its timeframe? Were the capacities of executing institution and counterparts properly considered when the project was designed? Were lessons from other relevant projects properly incorporated in the project design? Were the partnership arrangements properly identified and the roles and responsibilities negotiated prior to project implementation? Were counterpart resources (funding, staff, and facilities), enabling legislation, and adequate project management arrangements in place?

H. Assessment monitoring and evaluation systems.

The evaluation shall include an assessment of the quality, application and effectiveness of project monitoring and evaluation plans and tools, including an assessment of risk management based on the assumptions and risks identified in the project document. The Terminal Evaluation will assess whether the project met the minimum requirements for 'project design of M&E' and 'the application of the Project M&E plan' (see minimum requirements 1&2 in Annex 4). UNEP projects must budget adequately for execution of the M&E plan, and provide adequate resources during implementation of the M&E plan. Project managers are also expected to use the information generated by the M&E system during project implementation to adapt and improve the project.

I. Implementation approach:

This includes an analysis of the project's management framework, adaptation to changing conditions (adaptive management), partnerships in implementation arrangements, changes in project design, and overall project management. The evaluation will:

- Ascertain to what extent the project implementation mechanisms outlined in the project document have been closely followed. In particular, assess the role of the various committees established and whether the project document was clear and realistic to enable effective and efficient implementation, whether the project was executed according to the plan and how well the management was able to adapt to changes during the life of the project to enable the implementation of the project.
- Assess the extent to which the project responded the midterm review / evaluation (if any).
- Evaluate the effectiveness and efficiency and adaptability of project management and the supervision of project activities / project execution arrangements at all levels (1) policy decisions: Steering Group; (2) day to day project management in each of the country executing agencies.
- Identify administrative, operational and/or technical problems and constraints that influenced the effective implementation of the project.

The evaluation should also consider the following:

- How effectively has UNEP delivered the project as 'One UNEP' through effective collaboration across UNEP Divisions and with collaborating partners?
- To what extent does the project implementation approach foster South-South collaboration?

M&E during project implementation

- M&E design. Projects should have sound M&E plans to monitor results and track progress towards achieving project objectives. An M&E plan should include a baseline (including data, methodology, etc.), SMART indicators (see Annex 4) and data analysis systems, and evaluation studies at specific times to assess results. The time frame for various M&E activities and standards for outputs should have been specified.

The evaluator should use the following questions to help assess the M&E design aspects:

SMART-ness of Indicators

- Are there specific indicators in the log frame for each of the project objectives and outcomes?
- Are the indicators relevant to the objectives and outcomes?
- Are the indicators for the objectives and outcomes sufficient?
- Are the indicators quantifiable?

Adequacy of Baseline Information

- Is there baseline information?
- Has the methodology for the baseline data collection been explained?
- Is desired level of achievement for indicators based on a reasoned estimate of baseline?

Arrangements for Monitoring of Implementation

- Has a budget been allocated for M&E activities?
- Have the responsibility centers for M&E activities been clearly defined?
- Has the time frame for M&E activities been specified?

Arrangements for Evaluation

- Have specific targets been specified for project outputs?
- Has the desired level of achievement been specified for all Indicators of Objectives and Outcomes?
- An M&E system was in place and facilitated timely tracking of results and progress towards projects objectives throughout the project implementation period (perhaps through use of a logframe or similar);
 - biannual project reports were complete, accurate and provided a good representation of actual project performance;
 - that the information provided by the M&E system was used during the project to improve project performance and to adapt to changing needs;
 - and that projects had an M&E system in place with proper training for parties responsible for M&E activities.
- Budgeting and Funding for M&E activities. The terminal evaluation should determine whether support for M&E was budgeted adequately and was funded in a timely fashion during implementation.

Evaluation of financial planning requires assessment of the quality and effectiveness of financial planning and control of financial resources throughout the project's lifetime. Evaluation includes actual project costs by activities compared to budget (variances), financial management (including disbursement issues), and co-financing. The evaluation should:

- Assess the strength and utility of financial controls, including reporting, and planning to allow the project management to make informed decisions regarding the budget and allow for a proper and timely flow of funds for the payment of satisfactory project deliverables.
- Present the major findings from the financial audit if one has been conducted.
- Identify and verify the sources of co-financing as well as leveraged and associated financing (in co-operation with the IA and EA).
- Assess whether the project has applied appropriate standards of due diligence in the management of funds and financial audits.
- The evaluation should also include a breakdown of final actual costs and co-financing for the project prepared in consultation with the relevant UNEP Fund Management Officer of the project (table attached in Annex 1 Co-financing and leveraged resources).

K. UNEP Supervision and Backstopping

The purpose of supervision is to work with the executing agency in identifying and dealing with problems which arise during implementation of the project itself. Such problems may be related to project management but may also involve technical/substantive issues in which UNEP has a major contribution to make. The evaluator should assess the effectiveness of supervision and administrative and financial support provided by UNEP/DTIE including:

In summary, accountability and implementation support through technical assistance and problem solving are the main elements of project supervision (Annex 6).

UNEP aims to undertake joint projects that are aligned with its strategy. Whilst it is recognised that UNEP projects designed prior to the production of the UNEP Medium Term Strategy (MTS) / Programme of Work (POW) 2010/11 would not necessarily be aligned with the Expected Accomplishments articulated in those documents, complementarity may exist nevertheless. For this reason, the complementarity of joint projects with UNEP's MTS / POW will not be formally rated; however, the evaluation should present a brief narrative to cover the following issues:

Linkage to UNEP's Expected Accomplishments: The UNEP MTS specifies desired results in six thematic focal areas. The desired results are termed Expected Accomplishments. Using the completed ROTI analysis, the evaluation should comment on whether the project makes a tangible contribution to any of the Expected Accomplishments specified in the UNEP MTS. The magnitude and extent any contributions and the causal linkages should be fully described.

Project contributions that are in-line with the Bali Strategic Plan (BSP): The outcomes and achievements of the project should be briefly discussed in relation to the objectives of the UNEP BSP.

South-South Cooperation is regarded as the exchange of resources, technology, and knowledge between developing countries. Briefly describe any aspects of the project that could be considered as examples of South-South Cooperation.

The ratings for the parameters A - K will be presented in the form of a table. Each of the eleven categories should be rated separately with brief justifications based on the findings of the main

analysis. An overall rating for the project should also be given. The following rating system is to be applied:

HS	= Highly Satisfactory
S	= Satisfactory
MS	= Moderately Satisfactory
MU	= Moderately Unsatisfactory
U	= Unsatisfactory
HU	= Highly Unsatisfactory

4. Evaluation Report Format and Review Procedures

The report should be brief, to the point and easy to understand. It must explain; the purpose of the evaluation, exactly what was evaluated and the methods used. The report must highlight any methodological limitations, identify key concerns and present evidence-based findings, consequent conclusions, recommendations and lessons. The report should be presented in a way that makes the information accessible and comprehensible and include an executive summary that encapsulates the essence of the information contained in the report to facilitate dissemination and distillation of lessons.

The evaluation will rate the overall implementation success of the project and provide individual ratings of the eleven implementation aspects as described in Section 1 of this TOR. The ratings will be presented in the format of a table with brief justifications based on the findings of the main analysis.

Evidence, findings, conclusions and recommendations should be presented in a complete and balanced manner. Any dissident views in response to evaluation findings will be appended in an annex. The evaluation report shall be written in English, be of no more than 50 pages (excluding annexes), use numbered paragraphs and include:

- i) An executive summary (no more than 3 pages) providing a brief overview of the main conclusions and recommendations of the evaluation;
- ii) Introduction and background giving a brief overview of the evaluated project, for example, the objective and status of activities; UNEP Evaluation Office requires that a TE report will provide summary information on when the evaluation took place; places visited; who was involved; the key questions; and, the methodology.
- iii) Scope, objective and methods presenting the evaluation's purpose, the evaluation criteria used and questions to be addressed;
- iv) Project Performance and Impact providing factual evidence relevant to the questions asked by the evaluator and interpretations of such evidence. This is the main substantive section of the report. The evaluator should provide a commentary and analysis on all eleven evaluation aspects (A – K above) and include a section on the relevance of the project to, and contribution towards, the delivery of the Bali Strategic Plan (BSP) where the outcomes and achievements of the project should be briefly discussed in relation to the objectives of the UNEP BSP.
- v) Conclusions and rating of project implementation success giving the evaluator's concluding assessments and ratings of the project against given evaluation criteria and standards of performance. The conclusions should provide answers to questions about whether the project is

considered good or bad, and whether the results are considered positive or negative. The ratings should be provided with a brief narrative comment in a table (see Annex 1);

vi) Lessons (to be) learned presenting general conclusions from the standpoint of the design and implementation of the project, based on good practices and successes or problems and mistakes. Lessons should have the potential for wider application and use. All lessons should 'stand alone' and should:

- Briefly describe the context from which they are derived
- State or imply some prescriptive action;
- Specify the contexts in which they may be applied (if possible, who when and where)

vii) Recommendations suggesting actionable proposals for improvement of the current project. In general, Terminal Evaluations are likely to have very few (perhaps two or three) actionable recommendations.

Prior to each recommendation, the issue(s) or problem(s) to be addressed by the recommendation should be clearly stated.

A high quality recommendation is an actionable proposal that is:

viii) Annexes may include additional material deemed relevant by the evaluator but must include:

1. The Evaluation Terms of Reference,
2. A list of interviewees, and evaluation timeline
3. A list of documents reviewed / consulted
4. Summary co-finance information and a statement of project expenditure by activity
5. Details of the project's 'impact pathways' and the 'ROtI' analysis
6. The expertise of the evaluation team. (brief CV).

TE reports will also include any formal response / comments from the project management team and/or the country focal point regarding the evaluation findings or conclusions as an annex to the report, however, such will be appended to the report by UNEP Evaluation Office.

Examples of UNEP Terminal Evaluation Reports are available at www.unep.org/eou

Review of the Draft Evaluation Report

Draft reports submitted to UNEP Evaluation Office are shared with the corresponding Programme or Project Officer and his or her supervisor for initial review and consultation. DTIE/UNEP staff and senior Executing Agency staff are allowed to comment on the draft evaluation report. They may provide feedback on any errors of fact and may highlight the significance of such errors in any conclusions. Where, possible, a consultation is held between the evaluator, Evaluation Office Staff, the Task Manager and key members of the project execution team. The consultation seeks feedback on the proposed recommendations and lessons. UNEP Evaluation Office collates all review comments and provides them to the evaluator(s) for their consideration in preparing the final version of the report.

5. Submission of Final Terminal Evaluation Reports.

The final report shall be written in English and submitted in electronic form in MS Word format and should be sent directly to:

Segbedzi Norgbey, Chief,
UNEP Evaluation Office
P.O. Box 30552-00100
Nairobi, Kenya
Tel.: (254-20) 7624181
Fax: (254-20) 7623158
Email: segbedzi.norgbey@unep.org

The Chief of Evaluation will share the report with the following individuals:

Mr. Lawrence Agbemabiese
Energy Programme Officer
UNEP/DTIE/Energy
Tel: +33 1 4437 3003
Fax: +33 1 4437 1476
Email: Lawrence.agbemabiese@unep.org

Mr. Gregory Patilis
Fund Management Officer,
Corporate Services Section (CSS),
United Nations Environment Programme
P.O. Box 30552 - 00100, Nairobi, Kenya
Tel: (+254 20) 762-4722
Fax: (+254 20) 762-3918
Email: gregory.patilis@unep.org

The final evaluation report will be published on the Evaluation Office's web-site www.unep.org/eou and may be printed in hard copy.

6. Resources and Schedule of the Evaluation

This final evaluation will be undertaken by an international evaluator contracted by the Evaluation Office, UNEP. The contract for the evaluator will begin on 18th January 2010 and end on 12th March 2010 (26 days) spread over 8 weeks (6 days of travel to Western Yunnan, 10 days desk study and 10 of report writing). The evaluator will submit a draft report on 24th February 2010 to UNEP/EO, the UNEP Programme / Project Manager, and key representatives of the executing agencies. Any comments or responses to the draft report will be sent to UNEP / EO for collation and the consultant will be advised of any necessary revisions. Comments to the final draft report will be sent to the

consultant on 5th March 2010 after which, the consultant will submit the final report no later than 12th March 2010.

The evaluator will after an initial telephone briefing with Evaluation Office and the UNEP Programme/ Project Manager, conduct initial desk review work at the beginning of the evaluation and later travel to Western Yunnan in China and meet with representatives of the project executing agencies and the intended users of project's outputs.

In accordance with UNEP Evaluation Policy, all UNEP projects are evaluated by independent evaluators contracted as consultants by the Evaluation Office. The evaluator should have the following qualifications:

The evaluator should not have been associated with the design and implementation of the project in a paid capacity. The evaluator will work under the overall supervision of the Chief, Evaluation Office, UNEP. The evaluator should be an international expert in clean energy with a sound understanding of rural entrepreneurship and climate change issues. The consultant should have the following minimum qualifications: (i) experience in international biodiversity and forest issues; (ii) skills for management and implementation of research projects and in particular with research targeted at policy-influence and decision-making; (iii) familiar with cleaner energy/entrepreneurship iv) experience with project evaluation. Knowledge of UNEP programmes is desirable. Knowledge of Chinese is an advantage. Fluency in oral and written English is a must.

7. Schedule of Payment

The consultant shall select one of the following two contract options:

Lump-Sum Option

The evaluator will receive an initial payment of 30% of the total amount due upon signature of the contract. A further 30% will be paid upon submission of the draft report. A final payment of 40% will be made upon satisfactory completion of work. The fee is payable under the individual Special Service Agreement (SSA) of the evaluator and is inclusive of all expenses such as travel, accommodation and incidental expenses.

A.2 A LIST OF INTERVIEWEES AND EVALUATION TIMELINE

The list of person met and interviewed:

Organization	Name	Position	Meeting date
UNEP	Mr. Lawrence Agbemabiese	Energy Programme Officer	26-02-2010
E+Co Asia office	Mr. Jeffery Dickinson	Manager for Asia	20-01-2010
E+Co China	Dr. (Ms.) Jing Wu	Investment Officer	08-03-2010
E+Co China	Ms. Xiaonan Zhu	Office Manager	08-03-2010
TNC	Ms. Lulu Zhou	Project Officer	10-03-2010
TNC	Ms. Yue Wang	Yunnan Program Deputy Director	10-03-2010
Green Village Development Center	Ms. Yaqin Huang	Deputy Director	10-03-2010
Green Village Development Center	Mr. Ding	Director	10-03-2010
Foundation for Development Cooperation	Mr. Zuzhang Xia	Chief Technical Officer	10-03-2010
Kunming Rangjia Stoves Co.	Mr. Zeng Zuhong	General Manager	09-03-2010
DLLD		Director	10-03-2010
DLLD	Mr. Mason	Marketing Manager	08-03-2010
RCC	Mr. Li	Manager	11-03-2010
Haixi village	Mr. Tie Guang Ying	President, Village Association	11-03-2010
Ligang village	Mr. Feng	President, Village Association	11-03-2010
Tangui village	Mr. Gau Junhua	President, Village Association	12-03-2010
Tangman village	Mr. Yu Zhing Wey	President, Village Association	12-03-2010

The detailed programme of the mission is given below:

Date	Time	Activity	People met
07-03-2010	14h05	Arrival in Kunming	
08-03-2010	09h30	Meeting at E+Co office to discuss the project history	Jing Wu & Xiaonan Zhu
	15h00	Meeting with DLLD, one of the JV company with E+Co	Mr. Mason
	17h30	Meeting with the former in-charge of GVC project	Zuzhang Xia
09-03-2010	08h30	Leave with Jing Wu to visit the Kunming Rongjia factory	
	10h00	Discussion with the General Manager and visit workshop	Zeng Zuhong
	13h30	Visit of the stove production facilities and inspect the various stoves as outcome of R&D efforts	
10-03-2010	09h00	Travel to DLLD Office	
	10h00	Meeting and discussion of DLLD activities with support from E+Co	Director and Mason
	14h00	Meeting at TNC office to discuss project history and present status	Lulu Zhou, Yue Wang, Yaqin Huang and Ding
	17h00	Leave for airport and travel to Lijiang	
11-03-2010	08h00	Travel by road to Haixi village	
	10h00	Meeting with President of village association and interview of project beneficiaries	Tie Guang Ying
	13h30	Meeting with one of the RCC Managers	Li
	14h30	Travel by road to Ligang village	
	16h00	Meet the President of village association and interview project beneficiaries	Feng
12-03-2010	08h00	Travel by road to Shangri La	
	12h30	Arrival in Shangri La	
	13h30	Travel by road to Tangui and Tangman vilages	
	15h00	Meeting with Presidents of the two villages and interview project beneficiaries	Gau Junhua and Yu Zhing Wey
13-03-2010	08h00	Debriefing with Deputy Director of Green Village Development Center	Yaqin Huang
14-03-2010	10h10	Leave Shangri-La by flight and transit through Kunming	

A.3 A LIST OF DOCUMENTS REVIEWED / CONSULTED

Progress reports

Responsibility	Year	Access to reports
CESI	2004	August-November
	2005	January-March; April; June; July
	2006	January; February; March; April; May; June; April-June; July-September; October-December; December
	2007	February
GVC	2005	January; February; March; April; May; June; July; August; September; October; November; December
	2006	January; February; March; April; May; June; July; August; September; November; December
	2007	January; March; April; May

Various reports made available for project evaluation

Half-Yearly Reports	TNC	E+Co	UNEP DTIE
January-June 2004	No	Yes	Annual report (February-December 2004)
July-December 2004	Yes	Yes	
January-June 2005	Yes	Yes	Annual report (January-December 2005)
July-December 2005	Yes	Yes	
January-June 2006	Yes	Yes	Annual report (January-December 2006)
July-December 2006	Yes	No	
January-June 2007	Yes	No	Annual report (July-December 2007)
July-December 2007	Yes	No	
Final Report	April 2008	July 2008	Yes

Other reports

CESI	<ul style="list-style-type: none"> - English E+Co introduction - Introduction of sustainable energy technology - Energy enterprise business models - Project evaluation and risk management issues - Business planning for energy entrepreneurs - Introduction to finance for non-financial professionals - CREED CESI brochure - Enterprise introduction-DLLD - E+Co investment documents for five enterprises (Shandong Biomass, REC New Edge, DLLD, BioQi, and Anning Stove)
GVC	<ul style="list-style-type: none"> - Fact sheets of the five project sites (Haixi village, Liguang village, Xidang village, Xinren village, and Xinzhu village) - Project implementation agreements with village associations (Haixi association, Liguang association, Shitou Association, Nixi pottery association, Nixi chicken association) - Entrusting Loan Agreement between TNC and RCC (Phase 1 and Phase 2)

A.4 COMMUNICATION AND OUTREACH ACTIVITIES OF THE PROJECT TEAM

TNC	<ul style="list-style-type: none"> - Project brochures (CREED Project Overview and GreenVillage Credit) widely disseminated both in English and Chinese; awareness building posters prepared on sustainable energy technologies - CREED GVC website developed both in English and Chinese and updated on a regular basis (a monthly GVC electronic newsletter disseminated to experts working to promote sustainable energy in rural areas) - GreenVillage Credit booklets distributed at various local, national and international conferences and meetings - A documentary produced by China Central Television (CCTV) and broadcasted on CCTV-10 and other channels; coverage of GreenVillage Credit in several local media; a video on GVC uploaded on YouTube to reach global audience - Presentation of the operational experience in workshops/seminars in China and abroad - Visit of the project village sites by interested parties from China and abroad
E+Co	<ul style="list-style-type: none"> - Project brochures (Clean Energy Services Initiatives, REED Newsletter) were widely disseminated both in English and Chinese - Material (in Chinese) promoting investment in renewable energy and instructions for entrepreneurs on how to contact and work with E+Co (A business model for clean SMEs; CREED-CESI brochure, E+Co China brochure, Handbook for financial and development professionals) - Presentation of the CREED project at energy related workshops/conferences in China
Training and Seminar	<ul style="list-style-type: none"> - Networking at GVEP consumer lending workshop from 19-21 May 2004 - Participation in Renewable 2004 (a 2-day event organized by UNEP in partnership with UNF), from 1 to 4 June 2004 - Community-based training on biogas utilization and management for Haixi villagers, in partnership with Tai'an Township Government (April 2005) - CREED CESI Introductory meeting in Suizhou EPB in Kunming, for 14 participants (9 September 2005) - Training workshop on livestock raising and study tour in Lijiang for 35 participants (16 November 2005) - Training workshop on income generation skills (livestock raising and pomiculture) in Xidang village for 26 participants (26 November-02 December 2005) - Training workshop on cooking skills for tourism service in Xidang village for 64 participants (9-15 December 2005) - Training workshop on animal diseases prevention in Liguang village for 20 participants (31 December 2005) - Workshop on Ecological Environment Protection and Poverty Alleviation for 30 participants from the poverty alleviation offices of 8 Chinese provinces, participation of TNC as invited NGO by the Foreign Capital Project management Centre (FCPMC) of the State Council Leading Group Office of Poverty Alleviation and Development (April 2006) - Study tour of 16 members of Xidang Village Association and local forest rangers to Shangri-La, Yulong, Heqing and Midu Counties (September 2006) - Presentation of GVC project at the International Seminar on Theory, Practice and Policy for Rural reconstruction in China, in Jinhua City, Zhejiang province (September 2006) - Presentation of GVC experience at the Workshop on rural income generation projects organized by World Vision (December 2006) - Tourism service training workshop for 48 local villagers of Xidang village (March 2007) - Training workshop on walnut tree grafting, for 139 households (February 2008) - "Market opening workshops" targeting the industrial biogas sector held in 3 provinces with over 100 participants, covering information on technology, finance, pollution regulations, and steps for establishing and operating biogas system within a factory's compound (April 2006)

A.5 PLANNED ACTIVITIES AND IMPLEMENTATION TIME-FRAME

Responsibility	Activities (as outlined in the restructured project document)	Time-frame
Capacity building component		
TNC	- Alternative energy familiarization for consumer credit and income-generation opportunities	Months 13-40 (03/05-06/07)
	- NGO support	Months 13-38 (03/05-04/07)
	- Work with various government agencies on policy / programme reforms and project implementation in the targeted areas that promote or favor alternative energy options and support CREED projects	Months 12-38 (02/05-04/07)
E+Co	- Develop skills of E+Co West China team based in Yunnan. Includes enterprise and investment structuring and management, the ability to generate investment pipeline and provide services to entrepreneurs	Months 13-25 (03/05-03/06)
	- Translate and further adapt "REED" Finance Toolkit	Months 13-19 (03/05-09/05)
	- Organize and conduct workshops for entrepreneurs, financial institutions and others	Months 13-25 (03/05-03/06)
	- Provide enterprise development services to entrepreneurs, generating 10 or more actionable business plans	Months 13-35 (03/05-01/07)
Consumer credit and income generation component		
TNC	- Identify operational parameters of investment facility for consumer credit and income generation opportunities	Months 12-14 (02/05-04/05)
	- Create new or expand existing local partners for consumer credit and income generation component	Months 12-38 (02/05-04/07)
	- Secure additional financing for provision of Consumer Credit and Income Generation support	Months 12-30 (02/05-08/05)
	- Through partners, start extending CREED support for consumer credit and income generating activities for alternative energy	Months 14-40 (04/05-06/07)
Enterprise development component		
E+Co	- Continuously build the 50-70 enterprise pipeline	Months 13-35 (03/05-01/07)
	- Provide post-investment services to help investee companies to grow	Months 13-40 (03/05-06/07)
	- Provide \$600,000 CREED seed capital to 10 to 14 energy enterprises	Months 13-35 (03/05-01/07)
	- Seek out partners for and undertake the formation of a specialized investments funds	Months 13-35 (03/05-01/07)
	- Attract co-investment	Months 13-40 (03/05-06/07)
Communication and outreach component		
UNEP, TNC, E+Co and local partners	- Prepare a CREED communications strategy for local, national, and international audiences (month 9)	Months 13-35 (03/05-01/07)
	- Share CREED experiences with local and national governments, UN and donor agencies, development agencies, foundations, etc.	Months 9-40 (10/04-06/07)
	- Publish about 20 articles on the CREED project, both to national and international audiences, with focus on 1) business, 2) development and 3) energy/climate change policy audiences	Months 9-40 (10/04-06/07)
	- Present CREED programme and projects at international meetings; where practical assist local entrepreneurs and partners to attend/present at these events	Months 13-40 (03/05-06/07)
UNEP	- Prepare / disseminate project status reports	

A.6 PERFORMANCE OF THE E+CO CREED PORTFOLIO (AS OF AUGUST 2010)

Partner	Technology	CREED Investment	Type of Investment	Fund Disbursement	Paid Dividends	Returned Investment Capital	Investment Capital Return due	Co-investment capital or and valued in-kind contribution from entrepreneur
DLLD	Small-Hydro	\$50,000	Preferred equity	Mar-07	\$16,250		Mar-12	\$80,000
BioQi	Industrial biogas use	\$1,00,000	Equity with five-year put option	Sep-07		\$150,000	Fully paid	\$3,37,000
New Edge	Industrial biogas use	\$100,000	Equity with five-year put option	Dec-07	no payment		The first biogas plant was built and up running	\$1,23,691
Shandong Biomass	biomass combustion	\$250,000	Equity	Sep-07	no payment		The feasibility study gets governmental approval to build 25 MW biomass plant	\$2,50,000
Anning I - Kunming Rongxia	energy efficient stove	\$100,000	Preferred equity	Apr-08	\$27,000		Apr-13	\$1,34,208
Anning II - Xilaile Expansion	gasification stove	\$100,000	Preferred equity	Jan-10	\$6,000	\$4,271	Jan-15	\$1,40,000

Source: Based on data provided by E+Co in September 2010

A.7 SUMMARY OF CO-FINANCE INFORMATION AND STATEMENT OF PROJECT EXPENDITURE BY ACTIVITY

Project budget with co-financing information (derived from the revised project document)

Total UNF Project costs	Amounts in US\$	2,111,000
- Cost to United Nations Foundation	➤ 1,411,000	
- Grant to UNF from W. Alton Jones Foundation	➤ 200,000	
- Grant to UNF from the Nature Conservancy	➤ 500,000	
- Cost of E+Co (co-investment)	➤ 100,000	
- Cost to UNEP (in-kind)	➤ 100,000	
<i>Other financing leveraged over 5+ years (*)</i>		10,000,000
	Grand Total cost of project	12,311,000
Total costs of umbrella and sub-projects		2,111,000
<i>Umbrella project (UNEP direct participation)</i>		157,667
- Project management	➤ 56,667	
- Project dissemination / outreach	➤ 66,000	
- Project monitoring and evaluation	➤ 35,000	
<i>Sub-project with TNC</i>		786,550
- CC-IG fund provision	➤ 400,000	
- Pre- and post CC-IG support activities	➤ 261,310	
- Capacity-building	➤ 125,240	
- Alternative energy familiarization for CC-IG, financial institution training, Government policy support and training, NGO support, technical support and information dissemination on best practices		
<i>Sub-project with E+Co</i>		1,066,259
- Post-investment EDS and Asset Management	➤ 201,005	
- Seed Capital Investing	➤ 600,000	
- Fund Development and Implementation	➤ 97,600	
- Capacity building component	➤ 167,654	
- Yunnan-based team development plus enterprise development services to entrepreneurs plus orientation and cooperation with financial institutions and others		
<i>Project support cost (5%)</i>		100,524

(*) Comprised of direct co-financing of CREED enterprise investments and the creation of specialized funds within the broader West China context.

Comparison of budget and actual expenditures of the two project partners

TNC	Personnel	Sub-contract	Fellowship	Equipment	Miscellaneous	Total
2004 (actual)	30,082	0	0	0	0	36,082
2005 (Budget)	?	?	?	?	?	391,335
2005 (actual)	?	?	?	?	?	310,638
2005 (budget-actual)						80,697
2006 (Budget)	106,209	150,000	22,486	7,466	3,452	289,613
2006 (actual)	88,714	124,579	19,775	7,077	1,973	242,118
2006 (budget-actual)	17,495	25,421	2,711	389	1,479	47,495
2007 (Budget)	6,919	0	0	2,866	3,286	13,071
2007 (actual)	74,661	0	657	2,737	2,490	80,544
2007 (budget-actual)	-67,742	0	-657	129	796	-67,473
Final (Budget)	?	?	?	?	?	117,168
Final (actual)	22,271	71,610	0	2,433	20,890	117,204
Final (budget-actual)						
Total expenses	273,004	429,615	22,376	32,870	28,685	786,550
Total Budget	316,125	400,000	36,215	24,020	10,190	786,550
E+Co	Personnel	Seed capital	Training	Equipment	Miscellaneous	Total
2004 (actual)	75,856	0	0	0	0	75,856
2005 (Budget)	138,615	300,000	18,535	24,500	6,945	488,595
2005 (actual)	144,634	-171	7,863	8,291	1,280	161,897
2005 (diff)	-6,019	3,00,171	10,672	16,209	5,665	3,26,698
2006 (Budget)	125,700	298,916	7,447	8,354	1,500	441,917
2006 (actual)	125,208	0	7,987	8,283	1,523	143,001
2006 (diff)	492	298,916	-540	71	-23	2,98,916
2007 (Budget)	52,089	200,000	10,000	4,000	3,730	269,819
2007 (actual)	71,233	304,680	1,538	11,602	1,130	390,183
2007 (diff)	-19,144	-104,680	8,462	-7,602	2,600	-1,20,364

China Rural Enterprise Development Programme (CREED)

<i>Final (Budget)</i>	0	300,530	0	0	0	300,530
<i>Final (actual)</i>	0	300,530	0	0	0	300,530
<i>Final (diff)</i>	0	0	0	0	0	0
<i>Total expenses</i>	341,075	605,039	17,388	28,176	3,933	1,071,467
<i>Total Budget</i>		600,000				1,066,259

China Rural Enterprise Development Programme (CREED)

Statement of project expenditure by activity

Fiscal Year	Description - Object of Expenditure & Code	Key to shading	CREED Project Statement of Expenditures (by year, object of expenditure and project)			Total
			personnel	sub contract training	equipment miscellaneous	
			Project Code and Title			
			2570 UNEP	2571 TNC	2572 E+Co	
2005	International expert -generic object	110100		21,127.00	87,013.00	108,140.00
2005	International expert -generic object	110200		99,033.00	88,320.00	187,353.00
2005	UNDP National Professional staff..	120100	7,940.00	20,000.00		27,940.00
2005	Administrative Support - Temporary Posts	130200	24,943.43			24,943.43
2005	Mission costs	160100	13,627.10	10,846.00	55,077.00	79,550.10
2005	Field Projects - Sub-contracts	220100		250,000.00	80,675.00	330,675.00
2005	In-Service Training	330100		7,944.00	11,992.00	19,936.00
2005	Project Expendable Equipment	412000		9,387.00	4,503.00	13,890.00
2005	Project Non-Expendable Equipment	420100		7,310.00	10,580.00	17,890.00
2005	Rental of Premises	430100		3,812.00	9,500.00	13,312.00
2005	Sundry	530600		1,807.00	6,892.00	8,699.00
2005	Programme Support Cost - PSC	940000	2,325.53	21,563.30	17,726.10	41,614.93
2005 Total			48,836.06	452,829.30	372,248.10	873,913.46
2006	International expert -generic object	110100			10,000.00	10,000.00
2006	International expert -generic object	110200		(6,985.00)	78,506.00	71,521.00
2006	UNDP National Professional staff..	120100		(7,050.00)		(7,050.00)
2006	Mission costs	160100	22,133.57	14,675.00	1,858.00	38,666.57
2006	Mission costs	160200		8,625.00		8,625.00
2006	Field Projects - Sub-contracts	220100		147,622.00	(3,585.00)	111,766.00
2006	In-Service Training	330100		(4,903.00)	2,418.00	(2,485.00)
2006	Project Expendable Equipment	410100		1,043.00		1,043.00
2006	Project Expendable Equipment	412000			0.00	0.00
2006	Project Non-Expendable Equipment	420100		5,915.00	0.00	5,915.00
2006	Rental of Premises	430100		(326.00)	0.00	(326.00)
2006	Sundry	530600	44.74	1,408.00	0.00	1,452.74
2006	Programme Support Cost - PSC	940000	1,108.92	8,001.20	2,846.30	11,956.42
2006 Total			23,287.23	168,023.20	59,772.30	251,084.73
2007	International expert -generic object	110100			(7,300.00)	(7,300.00)
2007	International expert -generic object	110200		57,061.00	85,154.00	142,215.00
2007	UNDP National Professional staff..	120100		4,104.00		4,104.00
2007	Mission costs	160100	(960.25)		18,304.00	17,343.75
2007	Mission costs	160200		13,496.00		13,496.00
2007	Field Projects - Sub-contracts	220100		(2,488.00)	259,671.00	257,183.00
2007	In-Service Training	330100		657.00	2,978.00	3,635.00
2007	Project Expendable Equipment	410100		95.00		95.00
2007	Project Expendable Equipment	412000			9,158.00	9,158.00
2007	Project Non-Expendable Equipment	420100		429.00	(3,932.00)	(3,503.00)
2007	Rental of Premises	430100		2,212.00	(1,100.00)	1,112.00
2007	Sundry	530600	1,054.90	2,490.00	(3,440.75)	104.15
2007	Programme Support Cost - PSC	940000	4.74	3,902.80	17,974.61	21,882.15
2007 Total			99.39	81,958.80	377,466.86	459,523.05
2008	International expert -generic object	110100	31,653.72			31,653.72
2008	International expert -generic object	110200		13,520.00		13,520.00
2008	UNDP National Professional staff..	120100		2,946.00		2,946.00
2008	Administrative Support - Temporary Posts	130200	4,662.52			4,662.52
2008	Temporary Posts Compensation Benefits	130247	46.63			46.63
2008	Mission costs	160100	17,041.20	21,606.00		38,647.20
2008	Field Projects - Sub-contracts	220100		34,481.00	295,317.75	329,798.75
2008	In-Service Training	330100		18,678.00		18,678.00
2008	Maintenance of Equipment	510100		17,147.00		17,147.00
2008	Miscellaneous Maintenance Services	550100	35,000.00			35,000.00
2008	Project Expendable Equipment	410100		1,541.00		1,541.00
2008	Rental of Premises	430100		1,452.00		1,452.00
2008	Sundry	530600		5,833.00		5,833.00
2008	Programme Support Cost - PSC	940000	4,420.21	5,860.20	14,765.89	25,046.30
2008 Total			92,824.28	123,064.20	310,083.64	525,972.12
2009	Administrative Support - Temporary Posts	130100	19,176.00			19,176.00
2009	Temporary Posts Compensation Benefits	130147	191.76			191.76
2009	Miscellaneous Maintenance Services	550100	(19,176.00)			(19,176.00)
2009	Sundry	538800			4.25	4.25
2009	Programme Support Cost - PSC	940000	7.67		0.17	7.84
2009 Total			199.43	0.00	4.42	203.85
Grand Total			165,246.39	825,877.50	1,119,573.32	2,110,697.21

Source: Data provided by the UNEP Fund Management Officer

A.8 DETAILS OF THE PROJECT’S “IMPACT PATHWAYS” AND THE ROTI ANALYSIS

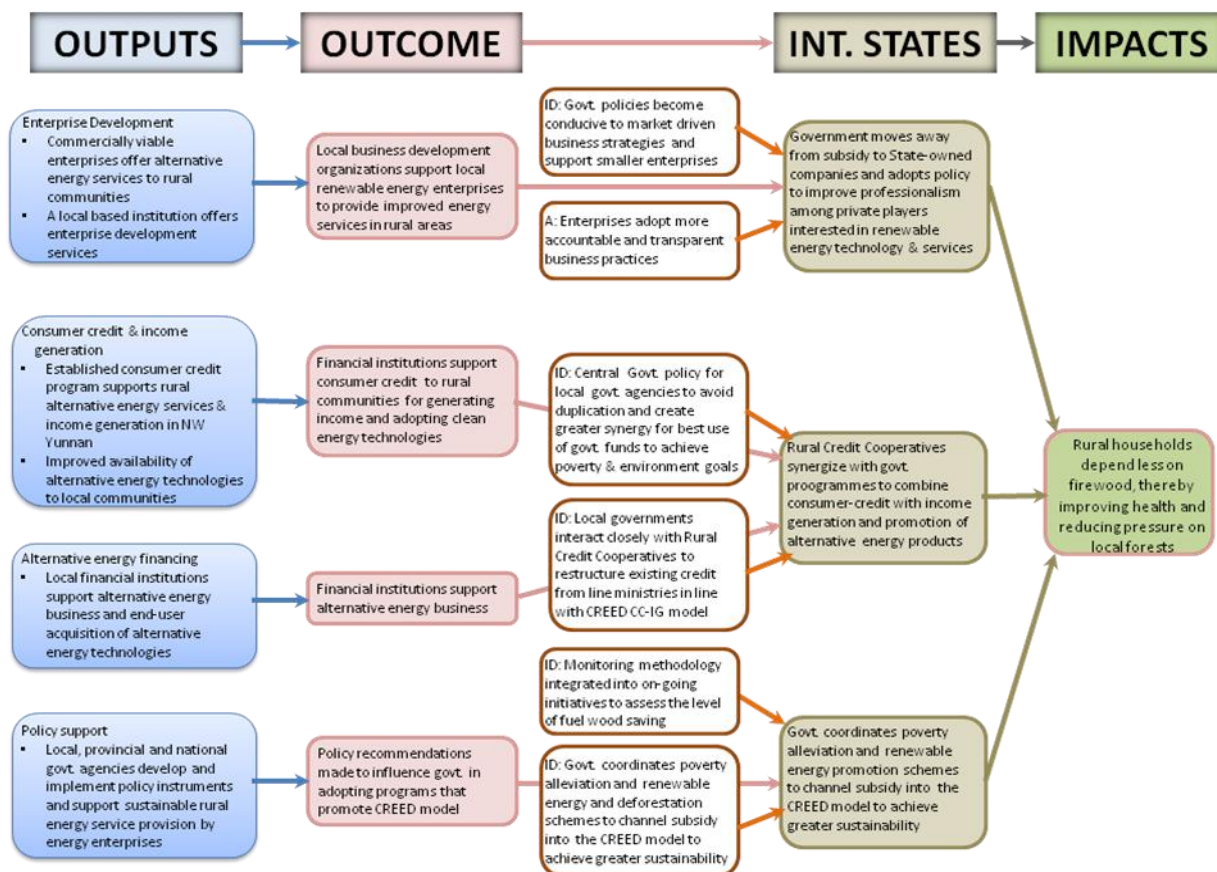


Table: Results rating sheet for the CREED project

		Rating (D – A)		Rating (D – A)		Rating (+)	Overall
Outputs	Outcomes		Intermediate		Impact		
<p>Enterprise development</p> <ul style="list-style-type: none"> - Commercially viable enterprises offer alternative energy services to rural communities - A local based institution offers enterprise development services 	<p>Local business development organizations support local renewable energy enterprises to provide improved energy services in rural areas</p>	B	<p>Government moves away from subsidy to State-owned companies and adopts policy to improve professionalism among private players interested in renewable energy technology and services</p>	D	<p>Rural households depend less on fire wood, thereby improve health and reducing pressure on local forests</p>		BD
<p>Consumer credit and income generation</p> <ul style="list-style-type: none"> - Established consumer credit program supports rural alternative energy services and income generation in NW Yunnan - Improved availability of alternative energy technologies to local communities 	<p>Financial institutions support consumer credit to rural communities for generating income and adopting clean energy technologies</p>		<p>Rural Credit Cooperatives synergize with govt. programmes to combine consumer-credit with income generation and promotion of alternative energy products and services</p>				
<p>Alternative energy financing</p> <ul style="list-style-type: none"> - Local financial institutions support alternative energy business and end-user acquisition of alternative energy technologies 	<p>Financial institutions support alternative energy business</p>						
<p>Policy support</p> <ul style="list-style-type: none"> - Local, provincial and national govt. agencies develop and implement policy instruments and support sustainable rural energy service provision by energy enterprises 	<p>Policy recommendations made to influence govt. in adopting programs that promote CREED model</p>		<p>Govt. coordinates poverty alleviation, renewable energy and deforestation schemes to channel subsidy into CREED model to achieve greater sustainability</p>				
	<p>Justification for rating: Activities undertaken by the project have led to the achievement of most of the outcomes though sustainability is not guaranteed because the impact drivers were not taken into account.</p>		<p>Justification for rating: The project seems to have missed out on the intermediary steps necessary (policy changes at the national level and institutional coordination) for the achieving the intended impact</p>		<p>Justification for rating: While project activities have resulted in useful outputs and outcomes, some important barriers have to be addressed for attaining the intermediate steps that are crucial for achieving the intended impacts in the foreseeable future.</p>		

A.9 THE EXPERTISE OF THE EVALUATOR

Dr. Brahmanand Mohanty has both his master and doctoral degrees in the energy field. As the regional adviser for Asia for the French Environment and Energy Management Agency (ADEME) for over 19 years, he has established institutional partnerships with several national energy and environment agencies for sharing experience, providing advisory services and capacity building in the areas of energy and resource management in industrial and commercial sectors. He has also been associated with the School of Environment, Resources and Development of the Asian Institute of Technology since 1986 as a faculty member, teaching subjects related to energy efficiency and management in the building and industry sectors. He devotes a part of his time to interact with NGOs and learn from challenges of access to energy in developing countries and sustainable energy and low carbon issues in the context of urban planning and development.

Dr. Mohanty has undertaken short- and medium-term energy-related consultancy assignments for bilateral and multilateral funding agencies in about a dozen countries to provide technical assistance. Agencies for which he has carried out consultancy work include the Asian Development Bank (ADB), the World Bank (WB) and the International Financial Corporation (IFC), the European Commission (EC), United Nations organizations (ESCAP, UNDP, UNEP, UN-HABITAT, UNFCCC and UNIDO), GTZ and DANIDA.