

GEF EO Terminal Evaluation Review Form

1. PROJECT DATA				
		Review date:		February 23, 2010
GEF Project ID:	805		at endorsement (Million US\$)**	at completion (Million US\$)**
IA/EA Project ID:	856	GEF financing:	0.727	0.73
Project Name:	Solar Water Heaters (SWHs) for Urban Housing in South Africa	IA/EA own:		
Country:	South Africa	Government:		
		Other*:	0.466	0.24
		Total Cofinancing		
Operational Program:	OP 6 Promoting the adoption of renewable energy by removing barriers and reducing implementation costs.	Total Project Cost:	1.194	0.97
IA	UNDP	<u>Dates</u>		
Partners involved:	Department of Minerals and Energy, through the Central Energy Fund (executing agency). South Sustainable Energy Society of Southern Africa, Department of Science and Technology, South African Bureau of Standards.	Effectiveness/ Prodoc Signature (i.e. date project began)		November 2003
		Closing Date	Proposed: April 2006	Actual: May 2008
Prepared by:	Reviewed by:	Duration between effectiveness date and original closing (in months):	Duration between effectiveness date and actual closing (in months):	Difference between original and actual closing (in months):
Luisa Lema	Ines Angulo	30 months	55 months	15 months
Author of TE:		TE completion date:	TE submission date to GEF EO:	Difference between TE completion and submission date (in months):
Jason Schäffler Nano Energy Ltd.		August 2008	December 2008	4 months

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

** The final version of the project appraisal document is not available. The terminal evaluation financing at completion that exceeds the GEF funding approved for the project, and that does not match the amounts reported in the Final PIR - developed after the finalization of the terminal evaluation. The amounts reported in this evaluation are taken from the first and Final PIR.

2. SUMMARY OF PROJECT RATINGS AND KEY FINDINGS

Please refer to document GEF Office of Evaluation Guidelines for terminal evaluation reviews for further definitions of the ratings.

Performance Dimension	Last PIR	IA Terminal Evaluation	IA Evaluation Office evaluations or reviews	GEF EO
2.1a Project outcomes	S	S	—	S
2.1b Sustainability of Outcomes	N/A	N/A	—	L
2.1c Monitoring and	N/A	MS	—	MS

evaluation				
2.1d Quality of implementation and Execution	NA	NA	—	MS
2.1e Quality of the evaluation report	N/A	N/A	—	MU

2.2 Should the terminal evaluation report for this project be considered a good practice? Why? No. The terminal evaluation was largely a report on surveys done to project participants; the third-party input is minimum and there is no certainty on whether data were verified. The financial information provided is poor, the total amount provided by GEF exceeds the GEF grant, and it does not report on the use given to co-financing.
2.3 Are there any evaluation findings that require follow-up, such as corruption, reallocation of GEF funds, mismanagement, etc.? No such findings are reported in the terminal evaluation or internal reviews.

3. PROJECT OBJECTIVES

3.1 Project Objectives

a. What were the Global Environmental Objectives of the project? Were there any changes during implementation?
According to the available project appraisal document and the first PIR (2005), the environmental objective of the project was to “achieve climate stabilization by reducing CO₂ emissions.” As per the terminal evaluation, there were no changes in the objectives of the project during project implementation.

b. What were the Development Objectives of the project? Were there any changes during implementation? (describe and insert tick in appropriate box below, if yes at what level was the change approved (GEFSEC, IA or EA)?)
According to the available project appraisal document, the Development Objectives were:

1. To improve the affordability of a hot water service for low-income households in South Africa.
2. To significantly reduce the electricity consumption associated with water heating.
3. To create a sustainable SWH industry within South Africa.
4. Increase employment opportunities associated with the growth of the SWH industry.

According to the first PIR (2005), the Development Objective of the project was to “improve the quality, accessibility, affordability and job prospects of solar water heaters in South Africa and transform the market from the middle-income sector.” Changes in the Development Objectives clearly reflect a downsizing in the project goals, from a \$5.4 M project described in the available PAD, to a \$1.2 M project described in both the PIRs and the terminal evaluation. The most recent version of the objectives reflects the general spirit of those in the available PAD.

Since the PIRs and terminal evaluation indicate that there were no changes in the development objectives during project implementation, it is not clear whether the MSP project appraisal document version available in the GEF PMIS is actually the final version approved by GEF, (and the changes were approved later at the IA level by UNDP), or if the information available in the PMIS is not up to date.

Overall Environmental Objectives	Project Development Objectives	Project Components	Any other (specify)
		X	

c. If yes, tick applicable reasons for the change (in global environmental objectives and/or development objectives)

Original objectives not sufficiently articulated	Exogenous conditions changed, due to which a change in objectives was needed	Project was restructured because original objectives were over ambitious	Project was restructured because of lack of progress	Any other (specify)
	It was decided not to work with low-income households, but with middle and high income, as a parallel initiative already dealt			

	with low income		
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4. GEF EVALUATION OFFICE ASSESSMENT OF OUTCOMES AND SUSTAINABILITY

4.1.1 Outcomes (Relevance can receive either a satisfactory rating or a unsatisfactory rating. For effectiveness and cost efficiency a six point scale 6= HS to 1 = HU will be used)

a. Relevance	Rating: S
<p>The outcomes of the project were relevant to GEF Operational Program 6, which aims at promoting the adoption of renewable energy by removing barriers and reducing implementation costs. The project contributed to the country's intention as a party in the Framework Convention on Climate Change, which has the ultimate objective of achieving stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. The outcomes of the project relate to the 2002-2006 UNDP Country Cooperation Framework, which was developed in response to the strategic priorities of the Government in the areas of transformation for human and environmental development, among others. Finally, the project contributed to achieving South Africa's <i>White Paper on Renewable Energy</i> target of 10,000 GWh of renewable energy contribution to total energy consumption by 2013 (see Section 7); the project set the model for the country to identify the four strategic areas needed to reach said target, namely, financial and legal instruments, technology development and information dissemination through awareness raising, capacity building and education.</p>	
b. Effectiveness	Rating: S
<p>In spite of delays in the delivery of outcomes, the project succeeded to achieve its objectives and most of its expected outcomes, and provided a basis for the establishment of a larger national program that continues to incentivize the use of solar water heaters. As per the information provided in the PIRs, the project cleared much of the ground for the launch of a project lead by the Electricity Supply Commission (ESKOM), and made it possible for said project to set the target of installing more than one million solar water heaters before 2013.</p> <p>The project contributed to achieving its environmental objective by providing energy savings through use of solar water heaters, which translated in greenhouse gas emission reductions by ~1.2 kt CO₂e/y by 2008. The environmental benefits of the project continue beyond its implementation, through the spin-off national program mentioned above, which may result in savings equivalent to the mitigation of 2.3 Mt CO₂e annually.</p> <p>The project also achieved most of the outputs related to its development objective by creating 75 ± 25 new jobs, installing 500 solar water heaters in middle-income areas, and providing financial incentives for buyers. An expected reduction in the retail price of solar water heaters over time was not achieved, and heaters were decided not to be installed in low-income areas, as was originally expected. The project contributed to remove market barriers for the large-scale commercialization of solar water heaters, including limitations in standardization, awareness, affordability and financing. As per the terminal evaluation, and as perceived in the implementation of further national projects, one of the clearest successes of the project was the development of product standards and a facility for the South Africa Bureau of Standards to test these. The project also carried on successful awareness rising and capacity building campaigns targeted to skilled workers and general consumers.</p>	
c. Efficiency (cost-effectiveness)	Rating: S
<p>The terminal evaluation does not provide information on cost-effectiveness. There is no information in the document or the annual reports on the investments related to each project activity, so it is not possible to make an objective comparison with other projects. However, USAID funded a similar project, which ended in 2006 (see Section 7). Said project addressed –amongst others- awareness raising, business training, business model development and technical capacity building for the installation of 300 solar water heaters in the City of Tshwane, South Africa. The project invested about 200,000 USD in the above-mentioned activities. Given that the GEF project delivered important additional results, such as the development of standards and codes of practice, and that it was executed by governmental agencies, the evaluator finds that the cost-efficiency of both projects was similar.</p> <p>Although the project timeline started in November 2003, the first disbursement only happened in May 2004. The reviews document two extensions for a total of 15 months. UNDP reported that the delays were caused by discontinuity of management staff, problems with subcontractors and “probably also unrealistic planning.” These extensions did not carry cost overruns.</p>	

4.1.2 Impacts: summarize the achieved intended or unintended impacts of the project.

The project triggered a transformation in the market for solar water heaters in South Africa by tackling market barriers such as severe limitations in standardization, technical capacity, awareness, and financing. It attained to reduce carbon emissions by ~1.2 kt CO₂e/y from the use of electricity for water heating, and helped set the ground for a project lead

by the Electricity Supply Commission to install one million solar water heaters before 2013.

4.2 Likelihood of sustainability. Using the following sustainability criteria, include an assessment of **risks** to sustainability of project outcomes and impacts based on the information presented in the TE. Use a four point scale (4= Likely (no or negligible risk); 3= Moderately Likely (low risk); 2= Moderately Unlikely (substantial risks) to 1= Unlikely (High risk)). The ratings should be given taking into account both the probability of a risk materializing and the anticipated magnitude of its effect on the continuance of project benefits.

a. Financial resources	Rating: L
There are no evident financial risks for the continuation of project outcomes. The project contributed to building a larger project lead by the Electricity Supply Commission. Said project has a budget of 2 billion ZAR (~250 million USD) to further grow the market and the use of solar water heaters in South Africa; the project is ongoing and expects that one million houses will have solar water heaters by 2013.	
b. Socio political	Rating: L
The project was successful at setting the ground for sociopolitical support to the continuation of the outcomes. The terminal evaluation rates the stakeholder participation as Satisfactory. The efforts to engage different stakeholders were visible and should provide a good basis for project sustainability. Amongst other efforts, the project widely disseminated information in technical publications and general media; it engaged different providers and attempted to integrate them in an industry association (which quickly dissolved); and it established partnerships with local and national governmental institutions.	
c. Institutional framework and governance	Rating: L
There are no reported political risks to the continuation of project benefits. The evaluator found that South Africa's <i>White Paper on Renewable Energy</i> , published in 2003 and still in force, sets out principles, goals and objectives for renewable energy, and commits the Government to ensure that renewable energy becomes a significant part of its energy portfolio by 2013. The paper established four key strategic areas that are aligned with the strategy of this GEF project, namely, financial instruments, legal instruments, technology development, and awareness raising, capacity building and education.	
d. Environmental	Rating: L
There are no evident risks that could jeopardize the continued delivery of the environmental benefits of the project.	

4.3 Catalytic role

a.. Production of a public good
The project provided a set of standards for solar water heaters, and a facility for the South African Bureau of Standards to test equipments against them. It also provided a Code of Practice for installation and maintenance of domestic solar water heaters, published by the same entity. The evaluator has verified that both the standards and the code of practice continue to in use and are frequently updated.
b.. Demonstration
This was a demonstration project, which helped set the ground for a larger follow-up project lead by the Electricity Supply Commission.
c.. Replication
The project was central to the Electricity Supply Commission initiative to provide incentives for the purchase of solar water heaters; this is evident in the fact that only standardized and tested products qualify for price rebates. Also, the terminal evaluation highlights how the project can be considered as a model to move an incipient market closer to a commercial market, which is applicable to other sectors and technologies.
d.. Scaling up
The South African Bureau of Standards' Code of Practice and standards for solar water heaters are used as at the national level as the basis for qualification of products to be supported through economic incentives.

4.4 Assessment of processes and factors affecting attainment of project outcomes and sustainability.

a. Co-financing.
To what extent was the reported cofinancing (or proposed cofinancing) essential to achievement of GEF objectives? Were components supported by cofinancing well integrated into the project? If there was a difference in the level of expected co-financing and actual co-financing, then what were the reasons for it? Did the extent of materialization of co-financing affect project's outcomes and/or sustainability? If it did, then in what ways and through what causal linkages?

<p>The terminal evaluation does not provide information about the source or use of co-financing. As per the internal reviews, co-financing of 0.24 USD million was provided by the Department of Minerals and Energy. Documents available on-line (see Section 7), including a presentation done by the project coordinator, state that the funding came from the Department of Science and Technology. The same documents assert that this co-financing covered the costs to test heaters against the newly established mechanical and thermal standards for solar water heaters; this was an essential investment for the success of the project and will remain to provide benefits for the solar water heater industry. The level of co-financing at the end of the project was about half of the expected amount.</p>
<p>b. Delays. If there were delays in project implementation and completion, then what were the reasons for it? Did the delay affect the project's outcomes and/or sustainability? If it did, then in what ways and through what causal linkages?</p>
<p>The project required two extensions for a total of 15 months. The delays in implementation were reportedly due to problems with sub-contractors, and changes in management staff. UNDP also suggests that there may have been unrealistic planning and deficient M&E. The delays did not reflect in increased costs, and did not affect the outcomes or sustainability.</p>
<p>c. Country Ownership. Assess the extent to which country ownership has affected project outcomes and sustainability? Describe the ways in which it affected outcomes and sustainability highlighting the causal links.</p>
<p>There was a clear commitment from the Departments of Minerals and Energy and Science and Technology. The governmental commitment and ownership is demonstrated by the co-financing provided, and by the adoption of project-developed standards in the larger national solar water heater program.</p>

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

<p>a. M&E design at Entry Rating (six point scale): S</p>
<p>The terminal evaluation does not provide an assessment of M&E at entry.</p> <p>The available version of the project appraisal document includes a comprehensive logframe, identifying indicators and means of verification. The logframe presented in the PIRs differs from that available in the 1999 version of the project appraisal document, and reflects an evolution and deuration of the objectives, outputs and indicators. The improved version, available in the 2005 PIR (first review), contains relevant and quantifiable indicators, but does not track the execution of activities. Except for the number of jobs in the sector, which was to be determined during implementation, there was baseline data for every indicator. However, final targets were missing for four out of five objective indicators.</p>
<p>b. M&E plan Implementation Rating (six point scale): MU</p>
<p>There were problems with the actual use of the logframe to track project progress. Evidence comes from all the reviews; on one hand, UNDP drew attention on the early PIRs (2005 and 2006) on the need to further develop a M&E system "with target values for the indicators, baseline data and regular monitoring;" on the other hand, the terminal evaluation noted that the use of the logical framework was varied and ad hoc, and recognized that reports became more thorough as the project progressed. The evaluator coincides with these views, and considers that the project did not have adequate monitoring, but does not attribute this to problems with the indicators chosen, but to the lack of regular collection of data on the indicators.</p> <p>The terminal evaluation found a favorable assessment by project participants and project steering committee as to whether there had been adequate periodic oversight of activities during implementation; the participants in the terminal evaluation survey rated this component as Moderately Satisfactory. Annual project reports were submitted, but did not provide enough information on project implementation and status of indicators. The PIRs documented one UNDP site visit per year in the first years, and quarterly meetings in the last year of implementation.</p> <p>Finally, the terminal evaluation failed to provide a third party assessment and thorough analysis of the project implementation and outcomes. Most of the document is limited to reporting on the results of a survey done to project partners, with no evidence of the verification or further analysis of the data. As per the report, the evaluator only reviewed the 2007 PIR and the project appraisal document. Notwithstanding the importance of gathering stakeholders' views as part of the evaluation process, the document is more an exercise on the perception of the project by participants than an evaluation of the outcomes.</p>
<p>b.1 Was sufficient funding provided for M&E in the budget included in the project document? The final budget and expenditures per activity is not available; however, implementation suggests that there was enough funding for M&E.</p>
<p>b.2a Was sufficient and timely funding provided for M&E during project implementation? The information is not available; however, funding seems to have been timely provided, at least after the first years of</p>

implementation.
b.2b To what extent did the project monitoring system provide real time feed back? Was the information that was provided used effectively? What factors affected the use of information provided by the project monitoring system? The reviews provided useful comments about the implementation, but often gave poor information on project indicators. The fact that the project implemented most of its activities in the last year proves that the information provided by the reviews was not efficiently used.
b.3 Can the project M&E system (or an aspect of the project M&E system) be considered a good practice? If so, explain why. No. The project had deficiencies tracking indicators and determining targets. The terminal evaluation did not provide a third-party assessment of the project.

4.6 Assessment of Quality of Implementation and Execution

a. Overall Quality of Implementation and Execution (on a six point scale): MS
b. Overall Quality of Implementation – for IA (on a six point scale): MS
Briefly describe and assess performance on issues such as quality of the project design, focus on results, adequacy of supervision inputs and processes, quality of risk management, candor and realism in supervision reporting, and suitability of the chosen executing agencies for project execution. - The evaluator is unable to assess the quality of the project design, as the final version of the project appraisal document is not available. However, the available early version of the project appraisal document already included an appropriate assessment of the baseline scenario, description of activities, and a complete set of indicators for monitoring. PIRs were submitted regularly tracking risk development and providing follow-up recommendations; however, the information made available on indicators was poor and not informative. Field visits took place once a year in the first two years, and quarterly meetings were held in the last year. The selection of the EA was appropriate, as well as the delegation of the execution to the Central Energy Fund, which allowed building strong political and private support to the project. Importantly, the quality of the terminal evaluation was not good, as it is not a third party review but a survey of project stakeholders done through interviews or questionnaires.
c. Quality of Execution – for Executing Agencies¹ (rating on a 6 point scale): MS
Briefly describe and assess performance on issues such as focus on results, adequacy of management inputs and processes, quality of risk management, and candor and realism in reporting by the executive agency. - The Department of Minerals and Energy delegated the execution responsibility to the Central Energy Fund -a group of seven companies operating in the energy sector, involved in the search for energy solutions to meet the future energy needs of South Africa, SADC and the sub-Saharan African region. In spite of the seriousness and capability of the delegated executor, there were problems with the management of the project. The terminal evaluation reported that the technical capacity of the project staff and consultants was varied, and that there was high turnover of staff and support personnel; this affected the implementation of the project and led to delays. However, the project delivered most expected outcomes, including the sale of 500 solar water heaters within only four months. The Central Energy Fund created successful links with local and national governmental entities and built a strong case for the use of solar water heaters as a source of energy in South Africa. The EA failed to provide sufficient information for project supervision. The PIRs and terminal evaluation drew attention to the lack of thorough monitoring by the EA; in this regard, the terminal evaluation noted that “the project document and logframe could have received more attention from the members of the PMU [project management unit]”, while the IA noted in the first two PIRs the need to establish a M&E system.

5. LESSONS AND RECOMMENDATIONS

Assess the project lessons and recommendations as described in the TE

a. Briefly describe the key lessons, good practice or approaches mentioned in the terminal evaluation report that could have application for other GEF projects
<ul style="list-style-type: none"> • The creation of conditions for market growth is valuable in attaining sustained uptake of renewable energy technologies. These include a standardized quality and product testing regime, a widened distribution and

¹ Executing Agencies for this section would mean those agencies that are executing the project in the field. For any given project this will exclude Executing Agencies that are implementing the project under expanded opportunities – for projects approved under the expanded opportunities procedure the respective executing agency will be treated as an implementing agency.

<p>maintenance infrastructure and increasing and continued public awareness.</p> <ul style="list-style-type: none"> • Symptoms of incipient markets must be recognized and addressed in the creation and/or support of industry bodies. • Transitions between staff changes need to be seamless with focused on knowledge management and effective archiving of information.
<p>b. Briefly describe the recommendations given in the terminal evaluation</p> <ul style="list-style-type: none"> • Monitoring and evaluation must be put in place early in the project and continue throughout the terminal evaluation. Improved ongoing M&E should be carried through independent assignment thereof and earlier contracting and inclusion of evaluator for the final evaluation in project tracking activities. • The final outputs should be made available and written products an institutional home. • Need to continue certification of the installers, the installation of the test rig for standardization of the product (still high cost and bureaucratic backlog) and the awareness of solar water heaters. Establishment of an institute to continue training of installers should be considered. • Follow-up projects should support the continuation of the industry association; its sustainability is paramount for continued quality assessment and assurance in the industry. This is particularly important in the environment of explosive growth expected as part of the utility demand side management initiative. • When further promoting the use of solar water heaters, the existing capacity of the industry and its ability to increase this capacity within favorable conditions should be taken into account. This capacity dictates how broadly awareness creation can take place without placing undue stress on the industry by inundating it with demand that it cannot meet. Creating expectations that cannot be met must be avoided.

6. QUALITY OF THE TERMINAL EVALUATION REPORT

<p>6.1 Comments on the summary of project ratings and terminal evaluation findings based on other information sources such as GEF EO field visits, other evaluations, etc.</p> <p>No additional relevant independent information was collected.</p>
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Provide a number rating 1-6 to each criteria based on: Highly Satisfactory = 6, Satisfactory = 5, Moderately Satisfactory = 4, Moderately Unsatisfactory = 3, Unsatisfactory = 2, and Highly Unsatisfactory = 1. Please refer to document GEF Office of Evaluation Guidelines for terminal evaluations review for further definitions of the ratings. Please briefly explain each rating.

6.2 Quality of the terminal evaluation report	Ratings
<p>a. To what extent does the report contain an assessment of relevant outcomes and impacts of the project and the achievement of the objectives? The report does not provide a third party assessment of the outcomes, but reports on the views of the project partners. It does provide a description of all project outcomes.</p>	MU
<p>b. To what extent the report is internally consistent, the evidence is complete/convincing and the IA ratings have been substantiated? Are there any major evidence gaps? There is no evidence that the data reported was verified by the evaluator. The ratings provided in the report are not given by the evaluator, but are the average rating given through a survey by a number of project partners.</p>	U
<p>c. To what extent does the report properly assess project sustainability and /or a project exit strategy? The report provides a description of the potential for the continuation of project outcomes, based on the government's follow up project and the ongoing development of a strategy to commercialize solar water heaters.</p>	MS
<p>d. To what extent are the lessons learned supported by the evidence presented and are they comprehensive? The lessons learned are supported by the project experience.</p>	S
<p>e. Does the report include the actual project costs (total and per activity) and actual co-financing used? No; the report only includes total amounts of funding and co-funding. The GEF funding amount is incorrect, exceeding by 20,000 the grant amount approved.</p>	HU
<p>f. Assess the quality of the reports evaluation of project M&E systems? The report does not provide a third-party assessment, but a compilation of project participant's ratings on M&E.</p>	U

7. SOURCES OF INFORMATION FOR THE PRERATATION OF THE TERMINAL EVALUATION REVIEW REPORT EXCLUDING PIRs, TERMINAL EVALUATIONS, PAD.

Department of Minerals and Energy, Republic of South Africa. 2003. *White Paper on Renewable Energy*. Available at

http://unfccc.int/files/meetings/seminar/application/pdf/sem_sup1_south_africa.pdf. Accessed Feb 23, 2010.

Sustainable Rural Development and Livelihoods. 2006. *Grant Activity Completion Report on USAID General Management Assistance Contract No: 674-C-00-01-00051-00; Strengthening of Municipal Services Delivered to the Poor by Increased access to Hot Water, Improved Sanitation and job creation while implementing innovative Solar Energy Technologies and General Energy Efficiency at Residences*. Available at USAID's Development Experience Clearinghouse website, <http://dec.usaid.gov/>. Accessed Feb 23, 2010.

Project presentations available at:

<http://active.cput.ac.za/energy/web/duw/papers/2007/NadiaMoosa.pdf>

<http://www.dbsa.org/Projects/Documents/CEF-UNDP-GEF%20SOLAR WATER HEATERS%20National%20Pilot%20Project.pdf>

Information about Eskom's Solar Water Heating Programme available at:

http://www.eskomdsm.co.za/?q=Solar_water_heating_Background_information

Terms of Reference for Terminal Evaluation available at:

http://erc.undp.org/evaluationadmin/downloaddocument.html%3Fdocid%3D1799&ei=wuuHS7L1J4aXtgei0_DJDw&a=X&oi=nshc&resnum=1&ct=result&cd=1&ved=0CAkQzgQoAA&usg=AFQjCNHLSHIFp8aJivChK5fxisS2Sme0w