2013 Annual Project Review (APR)

Project Implementation Review (PIR) OF UNDP Supported GEF Financed Projects

PIMS 3611 - Project Title: INDIA: Solar Water Heating

Focal Area	Climate Change – Mitigation
Lead RTA	Butchaiah Gadde
Lead Country(ies)	(ALB) Albania(ALG) Algeria(CHI) Chile(IND) India(LEB) Lebanon(MEX) Mexico(NYC) New York
Revised Planned Closing Date	20-March-2013(Note to Mod: This project has exhausted funds by 31st December 2013, but UNDP India granted US$ 25,000 for terminal evaluation and therefore, project was ended on this date. This will be the final PIR)

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Project Review & Evaluation:

1) Has the project mid-term review been finalized? Yes

   If no, when will it be finalized? Month/Year Not Applicable

2) Has the project terminal evaluation report been finalized? Yes

   If no, when will it be finalized? Month/Year Not Applicable

Project documentation and information: If available, please list website address (URL) of the project. This may be used in UNDP communications material.

- User's Handbook on Solar Water Heater
- Online Solar Water Heater Calculator
- Specific Website on solar Water Heater http://www.solarwaterheater.gov.in
- Toll Free National Helpline Number for solar water heater 1800 2 33 44 77
- Electronic newsletter on monthly basis & a compendium on the same
- Guidelines on installation of SWH in multi-storey buildings
- Awareness programmes/seminars organized in different sectors

- Training programmes organized for installers, builders & local consultants
- Training manuals for installers/technicians in 9 regional languages
- Fact Sheets & Reference manuals for Hospitality sector
- On-line tools for deciding about RE technology in Hospitality sector
- Case studies/success stories of RE technologies in various sectors
- DPRs prepared for industrial, healthcare & educational sectors, urban clusters & Himalayan Region
- Potential Assessment in different sectors under various scenarios
- Articles and success stories published in print & vernacular media
- Model reports on manufacturing of FPC and ETC based Solar water heating systems and entrepreneurship development
- Final reports on assignments related to Himalayan Region, Industries, Urban Clusters, Educational & Healthcare sectors, Hospitality sector etc.
- Low cost solar water heater developed by M/s SKM Design, Gurgaon
- Software for data management & monitoring of installations in field
- GOs issued/ building by-laws amended by various MCs/ULBs

UNDP-GEF Technical Advisor's Comments

Explanation for change to Overall DO Rating or Overall IP Rating:

Is this the terminal PIR that will serve as the final project report?

Yes

If the mid-term review (MTR) OR the terminal evaluation (TE) was started but not completed this reporting period, please explain how these are progressing and note if any delays are expected:

NA

If the mid-term review (MTR) OR the terminal evaluation (TE) was completed this reporting period, or if this is the final APR/PIR, please address the following points here:

a. Briefly outline the key findings and recommendations of the MTR or TE reports and the management response.

The project has completed its terminal evaluation (TE) during this reporting period. The following are the key recommendations:

- With the developments under GSWH project, MNRE should focus on labeling various SWH models with JNNSM Phase II. It is important to develop Minimum Energy Performance Standard for SWH in collaboration with BEE. This can be further improved through setting up of monitoring and reporting system. It can be possible as there is already a registered SWH PoA. This performance evaluation can easily be linked with MNRE capital subsidy of 30%.
- Detailed capacity building needs assessment shall be conducted for scaled-up activities of Phase II that may include training on how SWH systems function and save energy, MRV systems for new SWH installations, database management, systems to facilitate diligent and timely reporting of sales and installations, and strengthening enforcement of Government Orders, local bylaws and quality control standards.
- So far, after-sales service is not good. Therefore, training of semi-skilled and skilled workers is quite important. Such trained force is expected to provide after sales maintenance. JNNSM Phase II shall target these capacity building needs.
- MNRE provides 30% capital subsidy which needs to be changed to accelerated capital subsidy depreciation as continued subsidy provision may distort market transformation. Though two ESCOs are under implementation, there is no long term experience on the sustainability of such mechanism.
- Renewable Purchase Obligation (RPO) and Renewable Energy Certificate (REC) requirements shall include certain percentage of energy from SWH installations

The management response includes the following key actions:

- Presently, BIS standards have been set up for FPC and minimum technical standards set by MNRE for ETC systems. These ensure quality and reliability. MNRE has accredited manufacturers Channel Partners (Channel Partners are those who are recognized by MNRE meeting the requirements of MNRE) in their endeavour to promote solar water heaters. They

are expected to comply with the above standards. MNRE has held discussions with BEE for adopting star ratings during the life of UNDP-GEF project, however, it was not implemented. The TE recommendation can be taken as the next step to adopt star rating which will help increase the level of performance.

- The MRV systems help to assess the performance more methodically. They are approved measurement tool by UNFCCC. The UNDP-GEF project also has registered CDM-PoA and introducing MRV serves as a useful mechanism for carrying out the monitoring & verification. Current monitoring is done through state nodal agencies, and is limited to the installation of new SWH systems. MRV would certainly add value to the present monitoring protocol. Further, UNDP-GEF project has provided a set of recommendations for enforcing bye laws & existing GOs. It also has developed draft Government Orders to make use of SWH systems mandatory. A further step needs to be taken to build capacities of local bodies in order to help meet the set targets under JNNSM Phase II.
- UNDP-GEF project has trained at least 100 trainers who are expected to train installers in Indian Technical Institutes. Training manuals were produced by the project for installers & technicians which are uploaded on solarthermal website with a link to MNRE website. MNRE has sought 160 channel partners/ manufacturers set their own annual targets for training. This is in addition to the targets to be met under the National Solar Mission. The Channel Partners must also provide to MNRE their service delivery mechanisms, and the details of Annual Maintenance Contract (AMC). 25 of the Channel Partners currently have in house training programmes for installers & technicians. All these are expected to increase the installation rate and also support training of installation technicians.
- Subsidy has been the decision of Government of India. Though Government of India in general keen to avoid subsidies, there has been rationale to provide subsidy to SWH market promotion as it directly reduces electricity consumption and additionally reduces burden of additional electricity generation capacity. In JNNSM next phase it is important to apply accelerated capital subsidy depreciation and see how market responds. Otherwise subsidies may lead to market distortion. The experiences with ESCOs will be documented as a first step to understand and disseminate the benefits of the ESCO modality. Financing ESCOs to promote SWH market should be considered by IREDA [Indian Renewable Energy Development Agency], a financing arm of the MNRE.
- It is noted that 2/3rd of Industry energy requirements are for thermal processes versus 1/3rd of it is from electrical energy. Discussion must be initiated by MNRE with CERC [Central Electricity Regulatory Commission] & SERCs [State Electricity Regulatory Commission] to consider if RPOs can include the use of SWH systems.

b. Discuss any problems/issues with the final MTR or TE report or the MTR/TE process.

There are no problems/issues with the final TE report.

c. Discuss any problems/issues with the GEF Focal Area Tracking Tool.

There are no issues/ problems with the GEF focal area tracking tool.

UNDP Country Office's Comments

If the mid-term review (MTR) OR the terminal evaluation (TE) was started but not completed this reporting period, please explain how these are progressing and note if any delays are expected:

Not Applicable

If the mid-term review (MTR) OR the terminal evaluation (TE) was completed this reporting period, or if this is the final APR/PIR, please address the following points here:

The Terminal Evaluation (TE) was conducted and finalized as of June 2013

Key Recommendations made by the TE team are:

1. MNRE should provide resources to conduct surveys and develop a 2013 or 2014 baseline for SWH installations in India in the domestic sector. The survey will provide key information to the current SWH knowledge base on the functionality of existing SWH systems, typical maintenance and operational problems that persist with certain SWH models, SWH service life, and energy savings realized.
2. Re-assess and build state and municipal-level capacities to manage JNNSM Phase II SWH installations. Capacity building for local government personnel will be required in the 15-20 cities targeted under JNNSM Phase II.
3. Improve programme management capacity of MNRE through setting up a system for information collection and monitoring energy performance of new SWH installations. With the establishment of a SWH energy labeling system, MNRE will need to capture the positive energy performance impact of the JNNSM Phase through the setup of a robust monitoring and reporting system
4. Increase the training of semi-skilled and skilled workers who will be needed for the additional SWH installations to meet the targets of JNNSM Phase II. An intense SWH training program needs to be designed to train a sufficient number of installation technicians who will install SWH systems in the 15 to 20 cities defined under the JNNSM Phase II targets.
5. Strengthen energy labeling to promote best SWH models. With the scale-up of SWH installations forecast over the next 24 months, MNRE needs to select a system for labeling the various approved SWH models within JNNSM Phase II.
6. Strengthen financial mechanisms for SWH under JNNSM Phase II. Financial support in the form and accelerated depreciation and existing capital subsidy needs to be continued to encourage and catalyze SWH installations in the industrial sector for medium temperature hot water system.
7. Include solar water heaters as an option under the Solar specific Renewable Purchase Obligation (RPO) for industrial consumers with demand exceeding 1 MW.

Dates of site visits to project this reporting period:

10th June 2013

Dates of Project Steering Committee / Board meetings during reporting period (30 June 2012 to 1 July 2013):

12th December 2012

PROGRESS TOWARD DEVELOPMENT OBJECTIVES

	Description	Description of Indicator	Baseline Level	Target Level at end of project	Level at 30 June 2010	Level at 30 June 2011	Level at 30 June 2012	Level at 30 June 2013
Objective	Global Project Objective: Acceleration of the global commercialization and market development of SWH in residential, private service sector, and public buildings and, when applicable, industrial applications.	The amount of installed SWH systems in participating countries (m2). The annual market growth rate in the participating countries in terms of newly installed m2 (%). Level of customer satisfaction with the SWH systems installed.	As per the initial country-specific market assessments and baseline analyses.	An additional 1 million m2 of installed SWH capacity compared to the expected baseline development. Sustainable market growth of at least 20% in average in the participating countries by the end of the project.	N/A			
		Albania	33,000 m2 of installed collector area in 2005 with 7,000 m2 of new SWH capacity installed in 2005 with the expected 5% annual growth. Mixed customer satisfaction.	At least 75,000 m2 of new installed collector area during the project, and an annual sale of 20,000 m2 reached with expected continuing growth to reach the set target of 520,000 m2 of installed SWH capacity by 2020. Positive experience for over 80% of the clients who have purchased a SWH system on the basis of problem-free good quality products and after-sale services.	The national expert is hired to develop the still missing system to monitor the installed collector area, annual market growth or consumer satisfaction. The draft updated study on market analysis firstly carried out in 2006, shows a figure of 50,400 m2 of cumulative installed collector area in 2009 with 4,600 m2 of new SWH capacity installed in 2009.			

		Chile	Current baseline expansion of installed capacity shows an annual growth, relative to approximately 6,000 m2 of installed capacity in 2006. At this growth, total installed capacity will reach 11,000 m2 by 2011.	Accelerate and ensure sustainable growth rate of 45%-50% for the SWH market in Chile to reach a target of 35,700 m2. The growth rate in the residential sector will be proportionately faster. Residential systems will account for 80% of the total expansion in capacity.	In 2006, the total installed capacity of SWH in Chile was around 6,000 m2. The latest industry figures show that by March 2010 that number had increased to approximately 28,000 m2, with roughly 6,000 m2 of new units installed during 2009.			
		India	Estimated 2 m2 in India per 1000 inhabitants by the end of the project following the current baseline development. Growth of annual sales rate at 6 % in India, being lower than previous years as a result of market mistrust. Mixed customer satisfaction.	2 million m2 market acceleration contributing to (10 million m2 per 1 billion inhabitants). A steady, average growth rate of >30 % in India reached by the end of the project and continuing growth toward the expected saturation point of 140 m2 per 1,000 inhabitants towards 2025. Over 90% customer satisfaction on new installations on the basis of problem free good quality products and installation services.	Target level modified to 5 million m2 as per 11th Plan target and 20 million m2 as per goals of National Solar Mission. Installation Progress: During the Financial Year (FY) April 2008 to March 2009: 550,000 m2 of solar collector area; October 2008 to March 2009: 300,000 m2; and April 2009 to March 2010: 620,000 m2. Growth of 13% during FY 2009-10. (The disaggregated data is not available nor can be provided as data collection is done twice a year,	The achievement (approximately) from April 2010 to March 2011 is 1,000,000 m2. The cumulative achievement as of 30.6.2011 on solar water heating systems - collector area is 4,470,000 m2. The growth rate over the last reporting period is almost 60%. No studies were planned to analyse the customer satisfaction. Market of solar water heater is about 5 m2 per 1000 inhabitants.	During April 2011 to March 2012, the collector area installed was 1.1 million m2 which is 10% more than last year and 120% more than baseline year i.e 2008-09.Customer satisfaction was much more than earlier years as the systems were installed net of government subsidy with 5 years performance guarantee However, no studies were undertaken to note customer satisfaction. An amount of INR 106 Crore (about USD 21.2 million assuming 1 USD=50 INR) was released as govt	• Achieved 5.01 m^2 in India per 1,000 habitants [BG1]EOP [this year being final year]. • The annual growth rate achieved was 27% from April 2012 to March 2013 • The total installed collector area under the project influence is 2.4 million m2 .

					i.e. in September and March.) Quality issues being addressed through development of standards, certification, and labeling to improve customer satisfaction.		subsidy during last fiscal year (April 2011 to March 2012).	
		Lebanon	Estimated 26 m2 in Lebanon per 1000 inhabitants in year 2005 i,e 106,817 m2 total installed collectors with 16,000 m2 of new SWH capacity installed by year 2005. Average Annual Growth: 10-15 % in Lebanon as evidenced over the past 5 years with significant risks of not being able to sustain the continuing, steady growth . Mixed customer satisfaction.	At least 190,000 m2 of new installed collector area during the project, and an annual sale of 50,000 m2 reached with expected continuing growth to reach the set target of 1,050,000 m2 of installed SWH capacity by 2020. 55-75 m2 per 1,000 inhabitants with a steady, average growth rate of 15-20% reached by the end of the project and continuation until the expected saturation point of 55-75 m2 per 1,000 inhabitants and 200-225 m2 per 1000 inhabitants by year 2020. Positive experience by over 80% of the clients who have purchased a SWH system on the basis of problem-free good quality products and after-sale services.	Four large-scale SWHs were installed in governmental hospitals in Lebanon. The solar thermal market is growing, and the number of companies has nearly tripled from 16 in 2000 to 36 in 2008.			
		Mexico	Current baseline expansion of installed	Accelerate and ensure sustainable growth rate of 25-30% (in total installed capacity) for	Approximately 1,500,000 m2 residential sector installations			

			capacity shows 14% annual growth, relative to approximately 743,000 m2 of installed capacity in 2005. At this rate, total installed capacity will reach 1,500,000 m2 by 2011.	the SWH market in Mexico to reach a target of 2,500,000 m2. The growth rate in the residential sector will be proportionately faster. Residential systems made to account for 14% of the total installed capacity.	equivalent to 50% of market. Estimations based on information from suppliers, and program implementation from INFONAVIT, green mortgages. Annual growth 19% approximately Estimations based on information compiled from suppliers and associations.			
		Number of new countries proposing similar activities for GEF funding as a stand-alone SWH project which is a part of the broader global networking of the overall initiative.	UNEP	Interest in and start-up of replication of similar activities in other countries.	UNEP			
Outcome 1	Global Outcome 1: Effective initiation and coordination of the country-specific support needs and improved access of national experts to state-of-the-art information, technical backstopping, training, and international experiences and lessons learnt.	The number of countries with SWH market transformation and strengthening activities initiated.	0 (under this initiative or linked to it).	At least 16 (UNEP).	5 (Algeria has not yet signed the project document, but is in the process of doing so, and therefore has no PIR yet).			
		Availability of timely and cost-effective technical backstopping responding to the needs (to be evaluated on the basis of surveys	UNEP	UNEP	UNEP			

		conducted with the participating countries).						
		Albania			The Project Document was signed on 11 August 2009. First disbursement: 9 December 2009. National Project Coordinator (NPC) was hired in February 2010. The project management team is in place. The project's experts team is in place, consisting of an international consultant for the implementation of the project, a legal expert (energy sector), a legal expert (buildings/construction sector), an expert on market analysis, a supply side expert, a financial analysis expert, and an expert to integrate specific courses on SWH into the curricula of the technical and vocational schools.The Project Inception Workshop was carried out on 4 December 2009, and the National			

					Project Director and the NPC participated in the Global Inception Workshop in Tunisia carried out in February 2010.			
		Chile			The project document was signed on 31 March 2009. First disbursement: 30 September 2009. The Project Management Team was hired in September 2009, therefore the project has been under operation for 9 months. The Project Inception Workshop was carried out on 19 November 2009, and the National Project Coordinator (NPC), National Project Director (NPD), and CO participated in the Global Inception Workshop in Tunisia carried out in February 2010.			
		India			The project document was signed on 21 November 2008. First disbursement: 5 February 2009. The National Project Manager was appointed on	The Project Management Unit has advertised for a 'Technical Adviser (International) on 'Standards, certification, test procedures and test facilities for solar	Visits of NPM & members of Project Executive Committee were made to china to understand their markets, standards in place and the developments in SWH technologies.	• The project management unit was led by National Project Director who is also Joint Secretary at MNRE. This ensures effective

					11 December 2008. With the first installment of funds released on 5 February 2009, the full project team came on board by March 2009. The Project Inception Workshop was also held in March 2009. The Director, MNRE and the UNDP Country Office participated in the Global Inception Workshop at Tunisia in February 2010.	water heating systems'. The Adviser is expected provide inputs to enhance the capability and capacity of the supply chain for manufacturing and servicing of efficient, reliable and durable products, a National Quality System of standards, testing and certification needs to be developed to reflect the international State-of-the art on solar thermal standards.	(1) Study visits of few members of Project Executive Committee and individuals from FIS (IREDA), BIS, and industry to China were made to understand their markets, standards in place and the developments in SWH technologies. The visit to China was conducted from 25-29 Dec 2011 by a delegation of 5 participants - 2 from MNRE, 1 from IREDA, 1 from QCI and 1 SWH manufacturer. The four day programme included visits to a Govt Solar Energy product quality test centre in the Zheijiang Province, ET Manufacturer Company in South China and ETC manufacturer at Yuhan. The exposure to committee members has helped in knowing about the good quality tubes and their specifications which need to be imported for having quality products in the field. This exposure will further help in introducing policy	coordination with MNRE policy and implementation of Solar Water Heater Programme. • The project involved reputed consulting agencies, consultants and institutions who possess state-of-the-art information. Some to name are, IT Power, TERI, etc. • Technical backstopping was provided by Project Executive Committee and Project Steering Committee which possessed experts as members or as special invitees. • International experiences were gathered in the monthly newsletters prepared by Solar Thermal Federation of India (STFI).

							measures which restricts the Indian manufacturers from importing poor quality evacuated tubes into the country. (2) Hiring of an international advisor for "Standards, certification, test procedures and test facilities for solar water heating systems" was dropped by PEC, and instead decided to be done through internal experts/institutions. A committee was formed in the ministry, which is involved in carrying out this activity.	
		Lebanon			The project document was signed on 25 March 2009. First disbursement: 5 January 2010. The Project Management Team was hired in January 2009, therefore the project has been under operation for 9 months. The Project Inception Workshop was carried out in August 2009, and the National Project Coordinator (NPC) and National			

					Project Director (NPD) participated in the Global Inception Workshop in Tunisia carried out in February 2010.			
		Mexico			The project document was signed on 15 July 2009. First disbursement: 23 November 2009. Project initiated in November 2009, Inception Workshop carried out 10-11 December 2009. The NPC, NPD, and CO participated in the Global Inception WS in Tunis.			

Outcome 2	Global Outcome 2: The specific SWH market transformation targets of the first 6 participating countries reached by the end of the project, conducive to the overall global market transformation goals of the project.	The success in meeting the country-specific targets in the initial 6 countries (as per the sub-components listed below, corresponding to the specific country project outcomes).	The basic conditions for accelerated and sustainable SWH market development in most GEF program countries still missing. As per the initial country specific market assessments and baseline analysis.	A supportive legal and regulatory framework in 6 participating countries adopted (including an applicable quality assurance, certification, and labeling scheme). The level of awareness of the targeted end users. The capacity of the key local stakeholders built as per the targets of individual country components. Access to suitable financing to cover the higher up-front costs of SWH systems. The SWH penetration rate and the annual growth rate as per the stated country-specific targets.	N/A	N/A	N/A	N/A
Outcome 3	Outcome 2.1: An enabling institutional, legal and regulatory framework to promote a sustainable SWH market.	The adoption and effective enforcement of SWH-related laws and regulations (incl. possible financial and fiscal incentives) to promote sustainable SWH market development. The level of implementation (e.g. an amount of systems, whose installation has been facilitated by the new regulation, share of targeted buildings respecting a new building code, etc.) - to be based on periodical surveys still to be introduced by each	N/A	N/A	N/A			

		national project and as such not likely to be available for the first PIR).						
		Albania	No specific building regulations, fiscal, or public financial incentives in place to promote sustainable SWH market . No specific regulations for SWH standards, certification or quality control mechanisms in place.	The recommended amendments of the legal and regulatory framework to promote sustainable SWH market adopted and effectively enforced, including: - setting of specific targets for heat produced by renewable energy by 2020; - required amendments to the building code and building law to encourage the installation of SWH into new buildings and in those going through a major renovation; - sustainable financial incentive mechanisms in place by using the resources of the Energy Efficiency Fund or other public resources; - required fiscal incentives, such as exempting the imported SWH equipment and materials from import duties and related taxes with associated safeguard mechanisms	Two national experts hired to analyze the legal sector from the point of view of the energy and housing/buildings sectors came up with the following findings in their first reports: (i) Despite a number of policy actions and measures taken by the Albanian Government for the promotion of renewable energy systems (RES), there is a lack of coordination among them, therefore no desired results are achieved. (ii) Various primary and secondary legislations that effect the development of RES used for electricity production and transport have been enacted during the			

				to prevent their illegal use; - a decree to set up a SWH quality control system corresponding (to the extent feasible) to the relevant EU regulations and systems in place.	last decade, but no legislation to promote the use of RES for heating and cooling purposes in general and SWH systems in particular has been developed and adopted in Albania so far. (iii) Specific legal proposals to promote SWH systems will be integrated under the new draft laws on renewable energy and on construction respectively, expected to start formal procedures of their approval by the end of 2010. Two groups of interests have already been established: one in the area of energy with the Ministry of Economy, Trade and Energy (METE) as the leading institution and with the National Agency for Natural Resources, and the other one led by the Ministry of Public Works and Telecommunication , including the Association of Construction, the Association of			

					Architects and the Urban Planning Department of the Tirana Municipality. The national expert hired for the market assessment has analyzed the economic and financial feasibility of SWH systems on the basis of the current and planned future energy prices and SWH system costs and the market analysis completed in 2006 have been updated. According to the updated market analysis, the overall potential for the SWH systems for sectors, services, and households will reach almost 200,000 m2 in the year 2015 with 68.44% belonging to the service and the rest to household sector. This figure is presented to the METE to assist in their targets planned to be set in the new renewable energy law.			
		Chile	Voluntary technical standards for SWH in place; no performance	Assignment of and strengthened capacity of the assigned public entity to take the lead on supporting the	The GOC on August 19, 2009 approved Law No. 20,365, which provides a tax exemption to			

			or efficiency standards; no standards for installation. No specific building, fiscal, or public financial incentives in place to promote a sustainable SWH market.	sustainable development of the SWH market in Chile. New regulations for standards and adequate quality control mechanisms adopted and effectively enforced. New building regulations, fiscal or public financial incentives to promote sustainable SWH market adopted and effectively enforced.	building developers that install SWH in new housing projects. This tax exemption will cover a percentage of the SWH equipment and will vary depending on the cost of the new housing. The exemption will cover up to USD 1,295 per equipment, which in some cases will translate into 100% of the cost of the SWH. This law requires the establishment of new standards, the publishing (by the government) of a decree containing the rules and regulations to benefit from the exemption, and a technical norm. It also mandates the participation of the Chilean solar industry in the standard certification procedure and the development of testing laboratories. All these provisions aim to develop a high quality bottom line that will apply to all SWH installed in Chile.			

		India	Currently only a minor part of India is effected by the institutional entities. The standards do not reflect all the needed quality issues. Listings of suppliers with products complying to the current BIS standards valid for interest subsidy. Regulations are not well disseminated throughout India.	Expansion of solar program to other states of India. Update current standards. All government support should be linked to a certification system guaranteeing better quality. Dissemination of existing regulations throughout India (states and cities).	Promotion and expansion of the program to other states being taken up after completing systematic site-specific studies. Quality assurance issues including certification are being taken up. A technical Working Group Committee is being set up to establish the "minimum efficiency performance standards". A suitable mechanism is also being developed for rating of companies with a "Trust Mark" on the basis of their production facilities and quality of installation and repair services. Studies on Utilities & Regulatory Sector Policies and on Building Sector Policies carried out during 2009. Greater involvement of states and uniform utility policies as well as building sector policies are being promoted.	Ministry of Urban Development have requested states and union territories to consider implementing model regulation/bye-law for the installation of solar-assisted water heating systems in functional buildings with a view to make use of SWH mandatory in certain categories of buildings. Based on this, 21 states have issued necessary orders to their urban local bodies, and over 100 municipal corporations/ committees/ development authorities in 8 states have amended their building bye-laws or are implementing the orders in this regard. Enforcement of these bye-laws/orders is, however, poor in the states. Under this project, studies such as 'Building Sector Policies and regulations for promotion of solar	A GO/Model regulation for amendment in building bye laws for making the use of SWH in functional buildings is already in place by the Government of India. Effective implementation/ enforcement of the GOs/bye laws is, however, varying from place to place dependency upon local conditions. Two Consultants; one for Northern & 2nd for Southern region were hired during the year who are in the process of examining the GOs/bye laws at local level so as to get them effectively implemented. It is presumed that by December 2012, the end of the project, a suitable regulatory frame will be in place all over the country.	About 26 States & 100 Municipal Council/ Urban Local Body have implemented the Government Orders/ amended building bye-laws. Project provided professional support to some of them to help studying GOs/bye-laws and suggest methods to implement them effectively. Apart from desk review, the method included meetings with senior officers/ seminars/ training to State level implementing officials in the states of Gujarat, Andhra Pradesh, and Tamil Nadu, Kerala, Bengaluru, West Bengal, Bhopal and Chandigarh.

						water heating systems' and 'Promotion of solar water heating systems by utilities and regulators policies' have been undertaken. The findings from these studies have helped in understanding the implementation problems in enforcing these bye-laws/orders. The outcomes of the studies along with further work proposed in this regard will help formulating a suitable legal/regulatory framework to promote sustainable solar water heating market. Activity related to Minimum energy Performance is underway. SWH performance testing at 3 test centers have been initiated. Association formed with the Quality Council of India for the development of standards, certification, test procedures and test facilities for SWH systems.		
		Lebanon	No public institution in	The recommended amendments of the	The draft energy conservation law			

			place to actively promote sustainable market growth of SWH and other renewable energies. No specific building regulations, fiscal, or public financial incentives in place to promote a sustainable SWH market. No specific regulations for SWH standards, certification, or quality control mechanisms in place.	legal and regulatory framework to promote a sustainable SWH market adopted and effectively enforced, including: - setting of specific targets for the heat produced by renewable energy by 2020; - required amendments to the building code to encourage the installation of SWH in new buildings and in those going through a major renovation, including the existing buildings; - sustainable financial incentive mechanisms in place by using the resources of the Solar Energy Fund or other public resources; - required fiscal incentives such as exempting the imported SWH equipment and materials from import duties and related taxes with associated safeguard mechanisms to prevent their illegal use; - a decree to set up a SWH quality control system corresponding (to the extent feasible) to the relevant EU regulations and systems in place.	was prepared, in consultation with national stakeholders, and submitted to the MEW for approval. This law targets demand-side management of energy, which will therefore promote the SWH market. - Although the government has not set specific targets for heat produced, it did set a target of 12% energy production from renewable energy sources by 2012. - The project is currently working on identifying potential financial incentives to promote the use of SWH equipment. - Donor funding was mobilized for the installation of a SWH testing facility at the national industrial research institute, and a quality control system will be put in place as a result (activity is being initiated). - The MEW prepared a public policy paper for the electricity sector in which it encourages			

					the increased installation of SWHs in Lebanon.			
		Mexico	No specific building regulations (aside from Mexico DF municipal code), fiscal, or public financial incentives in place to promote sustainable SWH market. Voluntary standards or quality control mechanisms in place.	Assignment of and strengthened capacity of the assigned public entity to take the lead on supporting the sustainable development of the national SWH market. New regulations for standards and adequate quality control mechanisms adopted and effectively enforced. New building regulations, fiscal, or public financial incentives to promote sustainable SWH market adopted and effectively enforced.	• Analysis of the existing regulatory framework. • Workshops suggested that the existing framework is robust; however, there is a lack of knowledge of the population as to the application of the laws which needs to be addressed. • There is a lack of an adequate legal framework at both state and municipal levels which has to be completed in order to implement existing federal laws. • The initiative has identified three possible partnerships with municipal as well as state governments in order to establish processes leading to the creation of an adequate regulatory framework.			

Outcome 4	Outcome 2.2: Enhanced awareness and capacity of the targeted end users and building sector professionals to consider and integrate SWH systems into different types of buildings (or into other promising new market segments/applications).	List and/or a brief description of the results of awareness raising, marketing, and training activities implemented (qualitative) and demand for additional information, as measured by market surveys (quantitative). The share of new and renovated buildings in different market segments adopting SWH into their design (quantitative, if available).	N/A	N/A	N/A			
		Albania	According to an initial market survey, more than 50% responded not having made a positive decision yet, because of the lack of information and > 90% said they would like to have more information for final judgement.	Over 80% of the end users and designers participating in the market survey indicate that they have had enough information about SWH systems to make their decision. For all new and renovated buildings suitable for the integration of SWH systems, SWH has been considered as an option and over 20% from each group of these buildings is integrating SWH into their final design.	SWH website is established as part of the webpage of the UNDP Climate Change Programme (www.ccalb.org). Three different postcards with the main message “Let the sunshine in" were produced within the framework of the project by the MANIACARD (Free Card Advertising Media), and distributed all over the country, especially in the coastal cities, to increase the awareness about the use of solar energy for water heating. The project was presented at			

					the Territorial Approach to Climate Change (TACC) Awareness Raising Workshop in Tirana, Albania, 23-25 June 2010, organized by UNEP's Regional Office for Europe in partnership with the Ministry of Environment, Forestry and Water Administration, addressing the representatives of almost every Municipality/Regional Council of Albania, under the Mitigation Module. Increased interest on the GEF project is recognized from the producers, importers, and installers of SWH systems in Albania. First consultations were held with the representatives of the end users and designers. Their need and great interest to get trained on the subject of SWH systems is recognized. The participant lists and the content of trainings implemented under the previous ADA-			

					funded project on SWH in Albania are provided and the hired consultant is expected to get feedback from these participants to further elaborate the follow-up strategy of the GEF Project. The list of educational institutes to be consulted about specific SWH courses and/or integrating SWH better into the existing curricula is established and first discussions are taking place with the representatives of the Ministry of Education and Science and the Ministry of Labour and Social Issues to consult the way of new curricula approval.			

		Chile	Annual sales average of 1,252 m2 a year.	Annual sales reaching 11,000 m2.	According to a market study carried out by the technical unit of the Chilean Construction Chamber (CDT, in Spanish), the SWH market has increased significantly since 2006. Annual sales (in m2) of SWH for 2007, 2008, and 2009-2010 were 6,307, 7,094, and 7,937, respectively. The latter number (7,937 m2) represents sales for the period January 2009 to March 2010. Starting from a baseline of 6,000 m2 of SWH in 2006, the Chilean installations are estimated to have reached around 28,000 m2. The quantitative analysis discussed above comes from a market study carried out by the CDT on April 2010. The project will undertake a more in-depth survey during the second half of 2010 in order to have a clear baseline of the type of SWH in use and, to the extent			

					possible, on the state of these systems (type of building, type of system, installer, date of installation, quality of installation). Therefore, as of June, 2010, the project has not undertaken a market survey. Awareness raising activities implemented during the reporting period are as follows: - Radio and newspaper spots related to the Law 20.365 (paid by the GOC); - Brochures on the application of Law 20.365; - The Inception Workshop itself was used for awareness raising and information of building sector professionals; - Meetings with real estate developers and other stakeholders.			
		India	Annual sales average of 750,000 m2 a year.	>2,000.000 m2 a year.	Baseline and target levels modified and specific figure available now with the Ministry is provided under the baseline as given in	During the presented reporting period (1 July 2010 to 30 June 2011) the collector area installed was approximately	The collector area installed in FY April 2011 to March 2012 is 1.1 million sq. meters, a 10% increase from the previous FY April	The sales in reporting year was 1.05 million m2. The total sales during project period [project period 2009

					Global Project Objective section. Market Assessment Study undertaken in 2009. Further segmented Market Assessment Studies started in 2010. 620,000 m2 achieved during FY 2009-10 against 550,000 m2 during FY 2008-09. Target of 1 million m2 for 2010-11. Communications Strategy and Media Plan developed for awareness raising.	1,000,000 m2. While it was 620,000 m2 during the previous reporting period (1 July 2009 to 30 June 2010). To provide impetus to accelerate the collector area, variety of activities were completed/undertaken ranging from market studies that can help SWH entrepreneurs, involvement of ESCOs to motivate business with commercial sectors, and a number of workshops to end users. Some specific actions were, (i) 'Potential of Solar Water Heating (SWH) in the Himalayan Region, industrial sector and 5 States/National Capital region'; (ii) Development and implementation of communication strategy; (iii) Development of Energy Service Company models and (iv) organised a number of workshops/ training programmes, supported	2010 to March 2011. To enhance awareness activities conducted through the project has helped in increasing the annual sales: i. An electronic newsletter InSolTherm Times is published by Solar Thermal Federation of India (STFI) on monthly basis. ii. A toll free helpline 1 800 233 4477 is set up that responds to end users on SWH queries and are also informed on the project portal. iii. Installation of hoardings at prominent places on the benefits of SWHs and advertisements in print media. iv. Dedicated website i.e. www.solarwaterheater.gov.in. v. A total of 32 awareness workshops were organised in urban clusters, education and healthcare sectors, industrial and hospitality sectors, Himalayan region etc.	to 2013] is at 2.4 million m2 and annual average sales achieved was 600,000 m^2 per year. Some of the key awareness activities conducted to achieve the results were: Toll free helpline established. 5 lakh sms were sent Hoardings [huge display boards at key public place] put up in about 30 cities, Advertisement given on key national dailies knowledge products were developed and disseminated towards capacity building. Some of them are; SWH installers guide published in 9 different Indian languages: training manuals for SWH consultants, trainers & industrial applications; Case studies of SWH use [Health, & Educational sectors]. A project website – www.solarwaterheater.gov.in was launched and

						preparation of Detailed Project Reports.		operational. A new market mechanism i.e. Energy Service Company was demonstrated perhaps for the first time. 2 industrial units in Chennai adopted SWH ESCO mode.
		Lebanon	General public awareness campaign initiated in year 2006. According to an initial market survey, suppliers and manufacturers requested further and continuous awareness campaigns to maintain the general public awareness level.	Over 80% of the end users and designers participating the market survey indicate that they have received enough information about SWH systems to make their decision. A 15-20% average annual increase in SWH system sales.	The LCEC website was updated and a web page on SWH was incorporated into the site. Awareness raising sessions were held in public schools to familiarize students with RE. The project participated in a large national exhibition "Project Lebanon and Sustainability Week 2010", which attracted over 5,000 visitors and 200 exhibitors. The project also provided educational material to the "Science Village" and granted around 2,000 public school students with free entrance to the Science Village as part of the agreement.			
		Mexico	Annual sales	Annual sales reaching at	• PROCALSOL			

			average of 100,000 m2 a year in 2005 and 200,000 m2 reached by 2011, following the expected baseline development.	least 500,000 m2.	(program for the promotion of solar water heaters) is the working group under which the initiative operates in Mexico. It has been operating since 2007 mostly promoting the use of Solar Water Heaters throughout Mexico. This has been carried out through the support of institutions which participate within PROCALSOL, with seminars, congresses, keynote speakers, and the inclusion of the technology in fairs. • A specific promotion program has been developed by the German bilateral technical development cooperation agency Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH for the PROCALSOL program which identifies specific targets for the promotion of SWH and outlines a strategy for the promotion of the technology in the housing sector.			

					• The project has maintained contact with media that are interested in the evolution of SWH market. • A website was developed for PROCALSOL as well as a blog for the initiative.			
Outcome 5	Outcome 2.3: Increased demand for SWH systems based on availability of attractive end user financing mechanisms and/or other delivery models.	Description of the available financing mechanisms to support SWH investments (qualitative) and amount of financing leveraged by the mechanisms for SWH investments (quantitative) and amount of financing leveraged by the mechanisms for SWH investments (quantitative).	N/A	N/A	N/A			

		Albania	No specific longer-term financing and new delivery mechanisms offered and marketed for the SWH purchase.	The agreed financial support mechanisms (such as specific purpose bank loans, vendor financing, SESCOs, etc.) and new delivery models in operation with a cumulative target of USD 15 million leveraged by them for SWH financing by the end of the project.	Key financial sector stakeholders and local suppliers are identified. A couple of rounds of consultations with the key financial entities, SWH supply chain, and the electricity distribution company CEZ were held to get their opinion and further refine the type of complementary financial mechanism. Different proposals are still under discussion, one of them being the establishment and use of a Guarantee Facility to support the low-income groups. Further analyses are underway to explore the possibility to introduce at least two to three SESCOs in Albania which will ease the relationship between the banks and end users. The need for a stronger relationship with the banking community and for the bank staff to get trained on SWH issues has been			

					recognized. The UNEP-DTIE representative is expected on mission in Albania to assist with the design of the financial mechanism as planned.			
		Chile	The cost of SWH is currently prohibitively high for the majority of the residential sector and the financial sector (banks, mortgage institutions) lacks adequate support mechanisms.	Generation of demand for SWH through applicable consumer financing and, as applicable, financial support schemes with the objective of adding an increment of approximately 29,000 m2 of additional SWH capacity, and meeting set target of 35,700m2 of total installed SWH capacity. This equates to a target of leveraging USD 15-20 million (including both bank lending and cash contributions) to attain the set target.	Local conditions have pushed the SWH market from 6,821 m2 in 2006 to an estimated 28,159 m2 in May 2010 (Source: CDT). The current cost of a SWH for a single family home is around USD 1,900. The tax exemption under Law 20,365 will provide up to USD 1,295 per system for houses costing less than USD 80,870, which represents a subsidy of 68% of the cost. The subsidy could reach 100% of the cost of a new system in multi-house			

					buildings. The government is expected to provide tax rebates in an amount greater than USD 200 million dollars by the time Law 20,365 expires (i.e. 2013). Financial mechanisms already in place or under preparation: - Law 20.365 (operational on August 24, 2010), as described above; - Subsidy for the installation of SWH in low-income housing (under preparation, via Ministry of Housing, Program for the Protection of Family Assets); - Subsidy for the installation of SWH targeting end users (under preparation).			

	Outcome 2.3: Increased demand for SWH systems based on availability of attractive end user financing mechanisms and/or other delivery models.	India	No specific longer term financing and new delivery mechanisms offered and marketed for the SWH purchase.	The agreed financial support mechanisms and new delivery models in operation to meet the announced MNRE target to reach 10 m2 of installed SWH capacity by 2020.	Target level modified to 20 million m2 by year 2020. Study on New Financing Mechanisms undertaken in 2009 to review national and international financing models and schemes. Outcome provided inputs into new guidelines for SWH under the National Solar Mission. Study on business and financial model for Energy Service Company (ESCO) projects linked to CDM financing and tradable certificates is in progress.	Two studies were undertaken to analyse and strategize financing mechanisms. They are, (i) Design and implementation of new financiering mechanism and instruments for promotion of solar water heating systems' and (ii) 'Capacity building in the financing sector and for utilities and regulators'. Based on the outcomes of these studies, a new financing mechanism is in operation synergising with 'Jawaharalal Nehru National Solar Mission (JNNSM)'. The new mechanism provides direct support to beneficiaries in terms of subsidies as well as soft loans from banks/FIs. The mechanism of availing the support has been made simpler by involving various channel partners, including manufactuers, system integrators, and RESCOs (Renewable Energy Service Companies).	The new financial mechanism of providing net of govt subsidy to users through private channel partners (are accredited manufacturer/suppliers whose list is available at MNRE web site) directly from ministry has raised the confidence among users thereby increasing the market penetration. The net subsidy in general category states for all types of beneficiaries is 30% (60% in special category states) except for commercial establishments. USD 36 million has been spent by MNRE on subsidies until March 2012. Two industrial units have SWHs installed in ESCO mode which guarantees delivery of hot water to users, these units are (a) Soya Koya Sterring Limited with 35,000 LPD capacity, Sriperumpudur, TN and (b) Wheels India Ltd with 105,000 LPD capacity at Padi, Chennai. In addition to the 30% subsidy	Four actions helped enhance the demand namely, subsidy, awareness workshops followed up with handholding support to converge to installations; ESCO and CDM. Some details are given below; MNRE provides subsidy of 30%. This subsidy was re-introduced under Jawaharlal Nehru National Solar Mission [NNSM] which is one of the eight missions under National Action Plan on Climate Change [NAPCC]. 32 awareness workshops conducted by selected consulting firms to enhance demand for SWH. Further Consulting firms followed up expression of interest and provided technical support and handhold those interested till they placed an order for SWH. ESCO model has been demonstrated in two industrial units in Chennai.

						Approximately 9 million USD was spent in last three years by MNRE towards subsidy.	given by MNRE, the project provides 15% of the total costs. Under this mode, the operator ensures hot water provision for fixed monthly payment, which is reduced by an equal amount when incurred on fuel oil for water heating. The SWH systems & its operations are handed over to the user after a period of 5 years, at no cost. A CDM project is under implementation which will open a new financial mechanism once it gets registered with UNFCCC by December 2012. The revenue generated is proposed to be used for providing after sales services & performance guarantee to the users for the lifetime of the systems. Subsequently, the revenue could be incorporated with the subsidy.	A CDM project has been registered in UNFCCC to revenue generation on installation of SWHs.

		Lebanon	No specific longer-term financing and new delivery mechanisms offered and marketed for SWH purchases.	The agreed financial support mechanisms and new delivery models in operation with a cumulative target of USD 20 million (about 40-50% of the total investment needs) leveraged by them for SWH financing.	A financial mechanism is on its way of being established between UNDP and the Central Bank of Lebanon (BDL) to provide subsidized loans to small and medium enterprises for the installation of SWHs. Partners to this agreement include the MEW, Ministry of Finance, and the European Union. Details of cost-sharing modalities and amounts are under determination.			
		Mexico	Generally, the cost of SWH systems is too high for majority of residential sector and the financial sector (banks, mortgage institutions) lacks adequate support mechanisms.	Generation of demand for SWH through applicable consumer financing and, as applicable, financial support schemes with the objective of adding an increment of approximately 900,000 m2 of additional SWH capacity by 2011, and meeting set target of 2.5 million m2 of total installed SWH capacity by that year. This equates to an objective of leveraging at least USD 100 million (10% of total investment needs) to attain the set target.	• Mexico does not have many mechanisms which assure the uptake of SWH by end users. Financial institutions have not yet sized the importance of renewable energy technologies in Mexico and lack the instruments with which to assess the investment risk. • The National Fund for Workers Consumption FONACOT offers attractive end user financing for housing appliances and SWH figure as one of many			

					equipments, which a person can acquire through the mechanism. No specific promotion campaigns have been developed. • The National Workers' Housing Fund Institute INFONAVIT, Mexico's leading mortgage lender, has developed a Green Mortgage which includes SWH as product to be acquired through the mechanism. The initiative has had a reasonable uptake amongst housing developers spurring the growth of the SWH market. • The National Housing Commission CONAVI developed a subsidy program which supports the financing of housing improvements. One of the technologies included is SWH.			
Outcome 6	Outcome 2.4: A certification and quality control scheme applicable for the respective national conditions adopted and enhanced capacity of the supply chain to offer good quality products and services	Description of the quality assurance system in use (qualitative) and estimated market share of sold products adhering to the proposed quality control schemes (quantitative).	N/A	N/A	N/A			

	promoting a sustainable SWH market.	Level of customer satisfaction on the SWH systems installed (to be based on periodical surveys still to be introduced by each CP and as such not likely to be available for the first PIR).						
		Albania	Lack of adequate incentives for and, in some cases, lack of capacity of the supply side to offer equipment and associated services at the required level to sustain the market growth.	Adoption of a voluntary quality control, certification, and labelling scheme for the SWH equipment and installation services by the majority of the SWH equipment and service providers with a market share of over 80% at the end of the project. Over 90% of customer satisfaction on the certified equipment and services provided.	A working group with representatives from the private sector in the SWH supply chain, relevant technical institutes, NGOs, and public authorities identified to discuss and review the proposals for the establishment of a quality control scheme in Albania for both SWH collectors and systems. A draft proposal is submitted for a testing, certification, and labeling scheme for SWH systems. Interest of the consulted Albanian producers (whose number has gone to four from the previous three) was confirmed regarding the testing and certification of their products. The			

					General Directory of Standardization was consulted on the list of already approved related standards and on the way how to foster the approval of the others the project is interested in. A concrete proposal is in place from a consortium INFRAS/SWISSOLAR /SPF supported by the Swiss Government to implement activities in Albania in line with the objectives of Outcome 4 of the GEF Project "Certification and quality control scheme". Different from December 2009, the new Swiss proposal foresees efforts to support the SWH systems supply chain in Albania, while no assistance will be given to the already established Solar Testing Center in Tirana. The GEF project is working to finalize the follow-up strategy for the Testing Center in September 2010.			
		Chile	Lack of adequate	Implementation of capacity building	Regarding building local technical			

			incentives for and lack of capacity of the supply side to offer equipment and services at the required level to sustain market growth.	initiatives to raise product quality and services provided by local SWH manufacturers. Adoption of a voluntary quality control and certification scheme for SWH equipment and installation services adhered to by the majority (over 80%) of SWH equipment and service providers in Chile.	capacities, the GOC has been supporting the development of the industry as follows: First, the Ministry of Energy has supported two initiatives aiming at reducing the differences in technical capacities in the design, selection, installation, and maintenance of SWH: (i) Sponsor of the CDT and its "Nodo Solar" (www.nodosolar.cl, the Nodo Solar is a gateway for information exchange financed by the Chilean Development Corporation, and is currently known as PDT Solar), which has carried out courses, trainings, and seminars. The CDT has developed a guideline for the selection and installation of SWH. The project has been supporting the evaluation of these guidelines; (ii) The Fundación Chile is in the process of developing a voluntary standard and a competency			

					profile in order to train and certify local technicians. This work was started in November 2009 and is expected to conclude by the end of 2010. Second, regarding the public sector, there is a need to train public officials in charge of evaluating project proposals that will be presented under the tax exemption (Law 20.365) and the pilot projects that will be executed by the Ministry of Housing for low income housing. This training will be carried out during the second half of 2010. Third, the project is preparing TORs aimed at academic/technical institutions that can provide permanent training programs at the national level. The request for proposals will be launched the second half of 2010. Finally, the GOC and CDT are also discussing the use of labels or seals to			

					help consumers differentiate between products of different qualities. The issue of product quality and minimum standards is also discussed in the framework of Law 20.365.			
	Outcome 2.4: A certification and quality control scheme applicable for the respective national conditions adopted and enhanced capacity of the supply chain to offer good quality products and services promoting a sustainable SWH market.	India	Generally, the supply side capacity is not up to the required level of professionalism.	Enhanced capacity of the supply chain to respond to the growing demand with good quality services sustaining the market growth.	Work on Best Practices for SWH User Handbook, Guidelines for Multi-storey Buildings and Comparative Performance Evaluation in progress. Training programs for manufacturers, dealers, and installers planned.	Two activities were supported to support this outcome, namely, (i) Capacity building for SWH supply chain in building sector, (ii) Organization of training programme for installers and suppliers. Based on findings from these studies, MNRE has set minimum set of technical requirements on installation of SWH systems developed. MNRE also made existing quality aspects/standards on SWH mandatory. These guidelines are placed on the website. It is observed that the supply chain enhanced after new financing model introduced. However, this needs	Minimum technical requirements for SWH systems introduced in early 2011 is made mandatory for suppliers (as a condition for subsidy grant) which ensures quality. It has resulted in greater customer satisfaction and influenced a 10% increase in installation from 2010-11. Guidelines for installation of systems in multi-storeyed building have also been finalized and will be uploaded on website. Training programs for builders, architects, local consultants & installers have been conducted by the consultants in	(i) To support good quality products, testing facilities have been established where manufacturers products can be tested. • Three SWH test centers have been established. SEC, Gurgaon; Regional Test Center, Pune & Regional Test Center, Hamirpur. They comply to the BIS standards for FPC & minimum efficiency performance standards for ETC. (ii) To strengthen services, training was undertaken; • Training material developed.

						to be quantified. A designer's handbook for SWHs is under preparation that help designing and preparing system configuration more systematically. Preparation of guidelines for multi-storey buildings is in progress. Best Practices of SWH user's handbook published by ICPCI also made available on MNRE website. 3 pilot training programs has been planned by ICPCI to train SWH installers. ICPCI is also targeting ITI (Indian Technical Institute) for creating certified trainers who in turn would train 1000 installers, thereby support strengthening the supply chain.	various parts of the country during the year. A total of 27 training programmes have been organised to date, of which were Trainers - 4 nos., Installers - 19 nos., Builders & Architects - 4 nos., and Local consultants - 4 nos. Manufacturers have been asked to put the contact details of their dealers and servicing network on MNRE and Solar Water Heater websites for the benefit of customers.	• Total of 77 trainers were trained through 4 workshops. Total of 19 workshops conducted training 428 installers. (iii) Website was made more informative and a database software established; • Contact details of 71 Channel Partners [approved by MNRE] were uploaded on the project website. • Software has been established for database management on information on state-wise SWH installations.

		Lebanon	Lack of adequate incentives for and, in some cases, lack of capacity of the supply side to offer equipment and associated services at the required level to sustain the market growth.	Adoption of a voluntary quality control, certification, and labelling schemes for the SWH equipment and installation services by the majority of the SWH equipment and service providers with a market share of over 80%. Over 90% of customer satisfaction on the certified equipment and services provided.	A proposal for a qualification process of SWHs suppliers based on technical and operational criteria was prepared by the project team to be presented to MEW for consideration as a first step to control the quality of suppliers in the market. Furthermore, donor funding was secured to procure and install a national SWH testing facility at the premises of the Industrial Research Institute (IRI). This project has been initiated this year.			
		Mexico	Lack of adequate incentives for and some lack of capacity of the supply side to offer equipment and services at required level to sustain market growth.	Adoption of a voluntary quality control and certification scheme for SWH equipment and installation services adhered to by the majority (over 80%) of SWH equipment and service providers in Mexico.	• The Coordination Unit of the PROCALSOL along with INFONAVIT, CONAVI, and CONUEE designed a voluntary pre-norm (Dictamen de Idoneidad Técnica, DIT) with which to assess the performance of SWH. This instrument serves as the basis for programs such as Green Mortgages and Esta es Tu Casa (This is your house),			

					which is implemented by CONAVI. It defines bioclimatic regions to install technologies that allow the construction of sustainable housing and provides funds to purchase equipment. The DIT has been applied to roughly 60 SWH suppliers and close to 90 products. • A new voluntary standard developed by the National Agency for Standardization and Certification NORMEX has been published, which establishes test methods to evaluate the thermal performance of SWH.			
Outcome 7	Outcome 2.5: The provided support institutionalized and the results, experiences, and lesson learnt documented and disseminated (including monitoring, learning, evaluation, and other feedback for adaptive management).	Description of the available sustainable institutional support for SWH development (e.g. specific government entities, information points, SWH industry associations, etc.) that will provide continuing support for SWH market development beyond the end of the project and access to	N/A	N/A	N/A			

		project-related information by national and international experts.						
		Albania	No sustainability of the required market support. No results and experiences documented and disseminated.	Local institution(s) continuing to promote the SWH market after the end of the project. The reports and other public material from the project can be easily found and accessed.	Work has started for the updating of the baseline study development of the reporting format, and establishment of the institutional arrangements for the SWH market monitoring, which is expected to continue after the end of the project. The SWH website is established as part of the webpage of the UNDP Climate Change Programme (www.ccalb.org).			
		Chile	No sustainability of the required market support. No results and experiences documented and disseminated.	Local institutions continuing to promote the SWH market beyond the duration of the project.	The Chilean Construction Chamber and its technical development unit have been actively involved in the development of the SWH market with the support of the government. This institution will be key in the sustainability of the market beyond project duration. To date, the SWH market has evolved			

					beyond expectations, as follows: (i) In 2008, there were 69 companies providing SWH systems or components. By 2009, this number has increased to 108, including 85 new companies (implying that 46 companies that existed in 2008 were closed). Of the 108 companies, 70 are actively operating, and 7 of them own 72% of the market. (ii) Regarding training and capacity building, the project is focusing on mid- and long-term initiatives, while the industry (through CDT) is focusing on short-term training programs aimed at builders and real estate agencies in the framework of the tax exemption.			
		India	No results and experiences documented and disseminated.	The reports and other public material from the project can be easily found and accessed.	Work on documentation of case studies in progress and to be placed on website. Project reports and a user friendly "SWH calculator" to assess individual	ICPCI has prepared a 'compendium of Solar Water Heater applications'. Publishing of the newsletters and helpline activities have been assigned to the 'Solar	A total of 10 study reports prepared under the GSWH project have been summarized as booklets which includes case studies, assessment of SWH potential in selected	Documents generated list is given below and key modes of dissemination are also listed. Document dissemination was

					SWH capacity installation placed on website. The Indian Copper Promotion Council of India, the in-kind co-financing partner, is assessing the feasibility of web-based performance monitoring of large-scale projects.	Thermal Federation of India (SFTI)'. The website dedicated to the project is ready for launch. At present the final reports of studies undertaken in the project are placed on Ministry's website for the information of various stakeholders.	industrial segments, policies, regulatory and financial aspects. Reference manuals for hospitality sector, training manuals for installers & local consultants have been prepared. A total of 133 Detailed Project Reports (DPRs) for a total capacity of 1,537,000 lpd - Himalayan region (58), urban cluster (40), industrial sector (6), and health sector (29) have been prepared by consultants. The knowledge documents are uploaded on Ministry's website and on the recently launched project website: www.solarwaterheater.gov.in. A National workshop on SWH organised by MNRE in August 2012, with participation by 200 stakeholders will showcase all knowledge products published under the project.	done through following modes; • Project website • UNDP project page • Isotherm website • At National workshop where 200 key stakeholders participated. Minister of New and Renewable Energy released some of the documents and the event was covered in a number of newspapers. Copies of Key documents sent to State Nodal agencies for further dissemination.

		Lebanon	No sustainability of the required market support. No results and experiences documented and disseminated.	Local institution(s) continuing to promote the SWH market after the end of the project. The reports and other public material from the project can be easily found and accessed.	The Project Team/LCEC is constantly providing support to MEW, Ministry of Environment, and NGOs working in the renewable energy field. All reports are published on the LCEC website which is linked to the website of the MEW.			
		Mexico	No sustainability of the required market support. No results and experiences documented and disseminated.	Local institutions continuing to promote the SWH market beyond the duration of the project.	• The initiative's activities will be disseminated through an internet site developed specifically for the promotion of SWH. Institutionalized support will be published through specific solar thermal sites such as the Mexican www.procalsol.gob.mx and the global www.solarthermalworld.com. • Periodical information instruments will be drafted and published, detailing specific advances regarding the SWH market. • A specific working group was established to identify the route to be undertaken by			

					the project as to a sustained monitoring of SWH installations as part of the federal scheme of evaluating renewable energy installations.			

RATINGS OF PROGRESS TOWARD MEETING DEVELOPMENT OBJECTIVES

DO Rating: Please review the Development Objective Progress page of this APR/PIR and then answer the questions below. A DO rating will be generated based on your answers.	
1 Please rate the cumulative progress being made toward achieving the end-of-project targets as reported in the project results framework in the DO page of this APR/PIR	
2 Please rate the likelihood that the project will deliver environmental and social benefits for an extended period after project completion?	
3 Please rate the likelihood that social or political risks may threaten the sustainability of project outcomes	
Project Manager/Coordinator: Is the person managing the day to day operations of the project.	
MANDATORY RATING MUST BE PROVIDED for projects under implementation in one country or regional projects where appropriate.	
Please justify your rating and address the following points in your comments. Please keep word count between 500 words minimum and 1200 words maximum.	
1.	**Explain why you gave a specific rating.**
2.	**Note trends, both positive and negative, in achievement of outcomes as per the updated indicators provided in the DO sheet.**
3.	**Fully explain the critical risks that have affected progress.**
4.	**Outline action plan to address projects with DO rating of HU, U or MU.**
Overall 2012 Rating	S
2013 Rating	(HS) Highly Satisfactorily
Comments	India GSWH project was started on 21 November 2008 and ended on 31st March, 2013. Various studies undertaken in the project have revealed maximum potential in residential sector which needs to be tapped by sensitizing builders & developers, ensuring fool proof solution in multi-storey flats & effective implementation of government orders (GOs)/ amendment in bye-laws. Implementation through Utilities is the best model to ensure quality of products in the field, easy disbursement of subsidy & tapping the potential in this sector. In industrial sector, pharmaceutical, dairy, textiles & chemical industries have better potential & needs to be targeted first. Himalayan region also has vast potential for solar water heating. Low cost, light weight models need to be promoted under subsidy programme of Ministry. A record number of knowledge documents/products (over 25) developed under the project has helped various stakeholders in developing capacity building, supply chain and updating their knowledge for sustainable growth of the programme. The success of National Workshop organized in August, 2012 to highlight project outcomes by way of displaying the knowledge products/ documents and giving away Awards and Certificates of Appreciation to various stakeholders by Hon'ble Minister for New and Renewable Energy has been seen as one of the remarkable event in the history of solar water heating programme of the country. Information tools e.g Toll free helpline, monthly newsletter & dedicated website on solar water heater, training manuals, user's handbook & booklet on guidelines for installation of system in high rise

	buildings are found to be the most useful tools to the participants of workshop. The project activities have accelerated the annual installations of solar water heating systems to almost double in 2012 (1.1 million sq. m.) as compared to what was at the time of its inception (0.56 million sq. m.). Quality of products being installed in the field have been ensured by introducing minimum technical requirements to be adhered to by installers compulsorily with 5 years performance guarantee given to users. New financial models e.g CDM and ESCO were developed and efforts made in effective implementation of GOs/ bye-laws on mandatory use of systems in new buildings by local Governments have opened new ways for accelerating the growth of solar water heating programme. As regards CO2 abatement & electricity savings, assuming that a minimum of 2.4 million sq. m. of collector area is contributed through project activities as against a total installations of 4.56 million sq. m. during project period, around 24.8 million tonnes of CO_2 will be abated from the atmosphere during their life time of 15 years. Around 28 billion units of electricity is also expected to be saved during its life time of 15 years. The Steering Committee of the project has rated the project outcome highly satisfactory with almost all its objectives and outcomes achieved in time. The project started well in time after signing of the document and completed within in its scheduled period with no extension taken by the PMU. The funds received from GEF were also fully spent judicially with annual targets achieved as per AWPs.
UNDP Country Office Programme Officer: Is the UNDP programme officer in the UNDP country office who provides oversight and supervision support to the project.	
MANDATORY RATING MUST BE PROVIDED for projects under implementation in one country. Not necessary for regional or global projects.	
Please justify your rating and address the following points in your comments. Please keep word count between 500 words minimum and 1200 words maximum.	
1.	**Explain why you gave a specific rating, for example, if your rating differs from the rating provided by the project manager please explain why.**
2.	**Note trends, both positive and negative, in achievement of outcomes as per the updated indicators provided in the DO sheet.**
3.	**Fully explain the critical risks that have affected progress.**
4.	**Outline action plan to address projects with DO rating of HU, U or MU.**
Overall 2012 Rating	S
2013 Rating	(HS) Highly Satisfactory
Comments	The overall objective of the project was to accelerate the market for Solar Water Heater in India. The project had the objective to add 2 million m2 of collector area by EOP. It achieved a cumulative addition of 4.18 million m2 by March 2013. An estimate was made that the GEF project contributed to 2.4 million m^2. Thus the total cumulative SWH installation in India was 7.11 million m^2 as in March 2013. The direct

	GHG emissions reduction achieved during the project period are 1,656,735 tCO_2 on account of installing 2.4 million m2 of collector area. When calculated over the 15 year lifetime of the SWH systems, the total GHG emissions reduction achieved are 24,855,657 tCO_2. The project target of 11 million tCO_2. The installations were recorded year-wise from April to March since the Indian Government monitors programme on April to March year. The yearly SWH installed in 2008-09 was 360,000m^2; 2009-2010 was 600,000 m^2; 2010-11 was 1,000,000 m^2; 2011-12 was 1,100,000 m^2 and in 2012-13 was 1,150,000 m^2. **Though installed capacity fell short slightly, project thus over-met the target set forth in terms of GHG emission reduction. This was possible through following actions of the project;** • A number of actions to create awareness, market identification, development and marketing • Training and capacity building of different set of people in the supply chain • Knowledge products, training manuals • Policy and regulatory inputs • New market mechanism like Energy Service Company (ESCO) and CDM • Integration of UNDP-GEF support with MNRE's ongoing SWH programme 1) 32 awareness programmes were conducted inviting potential customers. This mobilized about 30,000 m2 of collector area. Several consulting firms were involved in conducting these programmes. These programmes were resulted in generating expression of interest from potential customers. Consultants further provided professional support to the potential customers, help them prepare proposals, evaluate the options and place order with manufacturers for installation. PMC held consultants accountable till the order was placed by potential customers for SWH; thereby ensuring professional support is extended to serious customers in getting SWH installed. Market development activities were carried out in terms of assessing market for solar water heater. A study indicated that over 70% of solar water heater market is in residential sector. To accelerate market for this sector, Hoardings promoting use of Solar Water Heaters in small cities were put up and mobile sms campaigns made. Another study analyzed market potential in industrial sector. One key finding was since it involves hilly region, the present design of thermosyphon system and large systems may not be easily transportable. This gave way to identifying a low cost box type solar water heater 'HIMHOT'. 20 systems were produced and tested in different locations in himalayan region for its performance. MNRE is seriously considering supporting entrepreneurs for its mass scale production and marketing. 2) The project aims to accelerate the installed capacity, consequently

require lot of skilled manpower to install, train the installers, professional support to potential investors to make informed decisions, train the users, etc. The project trained about 77 trainers who train the installers. Over 450 installers were trained. Installers training manuals and users manuals were prepared over 3,000 copies distributed. Installer's manuals were prepared in nine different languages. A number of consulting firms and consultants were involved for the first time in many of the activities supporting under the project and there was platform for interactions which enriched their experiences, thereby they are better geared to interact and deliver. For the first time they are driven to result based consultancy – awareness workshops conducted by them should result into expression of interest by potential customer and professional support provided to potential customer should result into actual placement of order for SWH. Some of the consulting firms who were associated are, TERI, GreenTech Knowledge Solutions Pvt Ltd, Mercados Pvt Ltd, CTRAN, IT Power Pvt Ltd, Dalkia Systems, STFI, ICPCI [also co-funded this project], etc.

3) A number of knowledge products have been developed which have been found useful to almost whole supply chain. Training manuals have been developed for manufacturer-installer-user etc. A list of documents developed under the project are listed below;

- User's Handbook on Solar Water Heater
- Online Solar Water Heater Calculator
- Specific Website on solar Water Heater http://www.solarwaterheater.gov.in
- Toll Free National Helpline Number for solar water heater 1800 2 33 44 77
- Electronic newsletter on monthly basis & a compendium on the same
- Guidelines on installation of SWH in multi-storey buildings
- Awareness programmes/seminars organized in different sectors
- Training programmes proceedings for installers, builders & local consultants
- Training manuals for installers/technicians in 9 regional languages
- Fact Sheets & Reference manuals for Hospitality sector
- On-line tools for deciding about RE technology in Hospitality sector
- Case studies/success stories of RE technologies in various sectors
- DPRs for industrial, healthcare & educational sectors, urban clusters & Himalayan Region
- Potential Assessment in different sectors under various scenarios
- Articles and success stories published in print & vernacular media
- Model reports on manufacturing of FPC and ETC based Solar water heating systems and entrepreneurship development

	• Final reports on assignments related to Himalayan Region, Industries, Urban Clusters, Educational & Healthcare sectors, Hospitality sector etc. • Low cost solar water heater developed by M/s SKM Design, Gurgaon • Software for data management & monitoring of installations in field • GOs / building by-laws amended by various MCs/ULBs 4) A number of activities were undertaken that provide inputs to the agencies that are responsible for policy making, formulating regulation and implementing them. Government had enabled 100 municipal corporations across 26 states to implement GOs to amend their bye-laws for SWH installations. The project sent qualified consultants to visit several municipalities helping them analysise the present status and provided recommendations to strengthen implementation. High level meetings were held with Principle Secretaries and Mayors in Kolkata, Bangalore, Hyderabad, Chennai, Bhopal, etc. Notification to encourage SWH were issued by Municipal Corporations of Kolkata [Durgapur, Howrah, and town planning MCs], Uttarakhand,[Dehradun MC] and rest are under serious consideration. At national level, minimum technical requirements for solar water heating system were developed and issued. Manufacturers are expected to adhere to these guidance. Handbook on designing SWH for high rise building developed and provided to key MCs and SNA for guidance. 5) A study analyzed market potential in industrial sector. One of the key finding was the facility management may not be enthusiastic to worry about day-to-day management of SWH. ESCO was trialed and was successful in two locations. Aspiration energy, a consulting firm is now slowly receiving more such requests. CDM Programme Of Activity (PoA) has been developed for leveraging funds. CDM revenues will go to manufacturers who will use it for funding warrantees and guarantees. 6) The MNRE integrated the UNDP-GEF project with Ministry's SWH programme as one window programme. The officers responsible for SWH programme of Ministry were involved with UNDP-GEF project in the capacity of NPD, NPM, project executive committee members, and project steering committee members. Awards were given out to those individuals, agencies who contributed to the development and acceleration of the SWH. Spin offs from the project include the following; • Input to MNRE for considering SWH [Renewable Energy based thermal applications in general] under the Renewable Energy Purchase Obligations • Low cost Solar Water Heater 'HIMHOT' which may be good solution for residences in hilly regions.

	Listing all the above achievements, there is a scope for improvements. Firstly, MNRE needs to set up benchmarks and standards for SWH just like Airconditioners/refrigeratos in India. Secondly the knowledge products developed can be converted to easily readable publications such as 'SWH compendium ', peer reviewed papers, discussion papers to capture the experiences and findings. Thirdly increased interactions with participating countries under the project. UNEP was expected to coordinate this activity, More than earlier, now UNEP needs to encourage participating countries interaction and lessons learnt are available for all. As the project achieved the target set forth, driven useful results and provided valuable spin offs, a rating of Highly Satisfactory is given.
Project Implementing Partner: Is the representative of the executing agency (in GEF terminology). This would be Government (for NEX/NIM execution) or NGO (for CSO Execution) or an official from the Executing Agency (for example UNOPS).	
RECOMMENDED but NOT MANDATORY for projects under implementation in one country and regional projects.	
Please justify your rating and address the following points in your comments. Please keep word count between 200 words minimum and 500 words maximum.	
1.	**Explain why you gave a specific rating.**
2.	**Note trends, both positive and negative, in achievement of outcomes as per the updated indicators provided in the DO sheet.**
3.	**Provide recommendations for next steps.**
Project Implementing Partner	
Overall 2012 Rating	(S) Satisfactory
2013 Rating	Highly Satisfactorily
Comments	During 2012-2013, the installed collector area of SWH systems was 1.5 million sq. m, which was marginally greater than the previous year when installed collector area was 1.1 million sq. m. An sms campaign used to publicize the toll free helpline was sent to 5 lakh sms, resulting in an increase in callers who were informed on the technical & financial benefits of SWH. A whole set of knowledge products developed under the project was officially released at a National Workshop held in August 2012. These included installation guides for SWH installers published in 9 different Indian languages: training manuals for SWH consultants, trainers & industrial applications; Case studies of SWH use [Health, & Educational sectors]. Awards to various stakeholders e.g. Municipal Corporations, Manufacturers, Entrepreneurs in ESCO mode, Industry exporting SWH systems, State Nodal Agencies and donor partners and best consultant were also given away for their outstanding

	achievements in the year. A project website – www.solarwaterheater.gov.in was also launched where all relevant information on the technology, incentives and manufacturers database has been uploaded. The website serves as a key source of information of SWH users & other stakeholders. The useful application of SWH systems for provision of hot water, replacing use of furnace oil has been showcased in 2 industrial units in Chennai, where the project has supported through a 15% technical grant ESCO mode for O&M of the systems A CDM project is registered with UNFCCC to revenue generated under new financing mechanism to be used for providing after sales services & performance guarantee to the users for the lifetime of the systems. It is, however, to be noted that completing all the activities proposed in 2012 with 100% budget spent has been considered to be an over achievement by the IP and thus could be considered as highly satisfactorily.
GEF Operational Focal point: Is the government representative in the country designed as the GEF operation focal point.	
HIGHLY RECOMMENDED but NOT mandatory for projects under implementation in one country. Not necessary for regional or global projects.	
Please justify your rating and address the following points in your comments. Please keep word count between 200 words minimum and 500 words maximum.	
1.	**Explain why you gave a specific rating.**
2.	**Note trends, both positive and negative, in achievement of outcomes as per the updated indicators provided in the DO sheet.**
3.	**Provide recommendations for next steps.**
GEF Operational Focal point	
Overall 2012 Rating	
2013 Rating	
Comments	
Other Partners: For jointly implemented projects, a representative of the other Agency working with UNDP on project implementation (for example UNEP or the World Bank).	
RECOMMENDED but NOT MANDATORY for jointly implemented projects.	
Please justify your rating and address the following points in your comments. Please keep word count between 200 words minimum and 500 words maximum.	
1.	**Explain why you gave a specific rating.**

2.	**Note trends, both positive and negative, in achievement of outcomes as per the updated indicators provided in the DO sheet.**
3.	**Provide recommendations for next steps.**
Other Partners	
Overall 2012 Rating	
2013 Rating	
Comments	
UNDP Technical Adviser: Is the UNDP-GEF Technical Adviser.	
MANDATORY RATING MUST BE PROVIDED for all projects.	
Please justify your rating and address the following points in your comments. Please keep word count between 500 words minimum and 1200 words maximum.	
1.	**Explain why you gave a specific rating (do not repeat the project objective).**
2.	**Note trends, both positive and negative, in achievement of outcomes as per the updated indicators provided in the DO sheet.**
3.	**Fully explain the critical risks that have affected progress.**
4.	**Outline action plan to address projects with DO rating of HU, U or MU.**
UNDP-GEF Technical Adviser	
Overall 2012 Rating	(S) Satisfactory
2013 Rating	(S) Satisfactory
Comments	This will be the last PIR for India Global Solar Water Heating project. The project achieved most of its major global environmental objectives & yielded satisfactory global environmental benefits by its closure in March 2013. The project has made steady progress towards achieving end-of-project targets as per the indicators outlined in the results framework. The project has demonstrated adaptive management and found workable solutions to the problems. During the course of GSWH project implementation, the project had leveraged additional resources of US$ 29,200,000 apart from the committed/realised co-financing contribution of US$ 10,800,000 by MNRE which was in the form of direct subsidy to the SWH. However, providing continued capital subsidy is not a sustainable solution to the market transformation of SWH although it's a decision of Government of India. It is important to apply accelerated capital subsidy depreciation and see how market responds. Otherwise in most cases continued provision of subsidies may lead to market distortion. After sales, service has been poor for most of the installed SWH systems. The next phase of JNNSM shall focus of training semi-skilled

	and skilled work force through dedicated trainings. Also monitoring, reporting and verification aspects were not focused under GSWH project and MNRE should take this forward under JNNSM phase II. So that SHW systems performance could be evaluated more methodically. There is one registered SWH PoA and MRV aspects from here could easily be replicated. Currently monitoring is done through state nodal agencies, and is limited to the installation of new SWH systems. MRV aspects would certainly add value to the present monitoring protocol. Presently, BIS standards have been set up for FPC and minimum technical standards set by MNRE for ETC systems. These ensure quality and reliability. MNRE has accredited manufacturers Channel Partners in their endeavour to promote solar water heaters. MNRE in collaboration with BEE should take forwards the developments of GSWH and ensure every system that is produced in the country will meet star rating which will help increase the performance level of SWH systems. Overall the project focused on strengthening capacity building through 32 awareness programmes targeting potential customers, and trained 77 trainers through training of trainers' workshops. Apart from this, about 450 installers were trained and provided them with installers' manuals and user manuals where over 3,000 copies distributed. Installers' manuals were prepared in nine different languages. One of the strengths of GSWH project was, it has developed and produced a number of knowledge products which have been found useful to almost whole supply chain. The GSWH project helped the government to enable 100 municipal corporations across 26 states to implement GOs and amend their bye-laws for SWH installations. The project sent qualified consultants to visit several municipalities, help them to analyse the present status and provided recommendations to strengthen implementation. There is not much gap between MTR and TE, which is hardly within a year, to implement MTR recommendations though it has demonstrated adaptive management from the beginning. The project has managed critical risks effectively and made a steady progress under all the outcomes to achieve its targets. The project is expected to deliver environmental and social benefits. Based on the criteria for DO rating, the project can be rated Satisfactory (S).
Highly Satisfactory (HS)	**Project is expected to achieve or exceed all its major global environmental objectives, and yield substantial global environmental benefits, without major shortcomings. The project can be presented as 'good practice'.**
Satisfactory (S)	**Project is expected to achieve most of its major global environmental objectives, and yield satisfactory global environmental benefits, with only minor shortcomings.**
Marginally Satisfactory (MS)	**Project is expected to achieve most of its major relevant objectives but with either significant shortcomings or modest overall relevance. Project is expected not to achieve some of its major global environmental objectives or yield some of the expected global environment benefits.**
Marginally Unsatisfactory (MU)	**Project is expected to achieve its major global environmental objectives with major shortcomings or is expected to achieve only**

	some of its major global environmental objectives.
Unsatisfactory (U)	**Project is expected not to achieve most of its major global environment objectives or to yield any satisfactory global environmental benefits.**
Highly Unsatisfactory (HU)	**The project has failed to achieve, and is not expected to achieve, any of its major global environment objectives with no worthwhile benefits.**

PROGRESS IN PROJECT IMPLEMENTATION

Global Outcome 1- Key Outputs this Reporting Period: Effective initiation and coordination of the country-specific support needs and improved access of national experts to state-of-the-art information, technical backstopping, training, and international experiences and lessons learnt.
• Effective coordination by the PMU, headed by the National Project Manager who is also ex Director of Solar Thermal Programme in MNRE helps project activities to be aligned with the government programmes, strengthening the implementation & resulting in positive outcomes.
Global Outcome 2:- Key Outputs this Reporting Period: The specific SWH market transformation targets of the first 6 participating countries reached by the end of the project, conducive to the overall global market transformation goals of the project.
• As per MNRE records the annual installed collector area of SWH systems was 1.5 million sq. m. during April 2012 to March 2013. This is nearly three times the base year 2008-2009 when it was 360,000 m^2.
Outcome 2.3:- Key Outputs this Reporting Period: Increased demand for SWH systems based on availability of attractive end user financing mechanisms and/or other delivery models.
• Energy Service Company (ESCO) model was demonstrated at two industrial units namely Wheels India Pvt Ltd., at Padi and Sona Koy Systems Pvt Ltd. at Sriperumbadur, Chennai by ESCO Aspiration Energy Pvt. Ltd. The ESCO operations have run for a year and 4 months respectively. • A CDM PoA has been registered with UNFCCC. The revenue generated will go to manufacturers who would fund after sales services & performance guarantee to the users for the lifetime of the systems.
Outcome 2.4:- Key Outputs this Reporting Period: A certification and quality control scheme applicable for the respective national conditions adopted and enhanced capacity of the supply chain to offer good quality products and services promoting a sustainable SWH market.
• Three testing facilities are operational at test centres namely Solar Energy Center, Gurgaon; Regional Test Center, Pune & Regional Test Center, Hamirpur. These facilities are open to the manufacturers to test their SWH system/ components for complying with the “minimum efficiency specifications” (for ETCs) and BIS standards for FPCs systems.
Outcome 2.5:- Key Outputs this Reporting Period: The provided support institutionalized and the results, experiences, and lesson learnt documented and disseminated (including monitoring, learning, evaluation, and other feedback for adaptive management).
• The Terminal Evaluation of the project was concluded in June 2013. It received an overall SATISFACTORY rating. • A **project closure** report was prepared describing the project impacts.
Outcome 3- Key Outputs this Reporting Period: Outcome 2.1: An enabling institutional, legal and regulatory framework to promote a sustainable SWH market.
• Studies were undertaken in both the Northern & Southern states to assess the barriers in the effective implementation of GOs & bye laws for use of SWH systems. Findings revealed that the key issues were: (1) Lack of coordination among various state departments, (2) Absence of

technical guidelines for implementation of SWH systems, (3) Limited capacities and human resources for implementation, (4) Lack of incentives (as in rebates in property tax & power bill) and (5) Lack of awareness of SWH systems and its benefits. Recommendations suggested towards this end were: (1) Better coordination amongst state agencies, (2) Amendment of bye-laws making use of SWH systems in specified set of buildings mandatory, (3) Develop a user friendly & transparent implementation process, (4) Develop key technical guidelines for implementation, (5) Build capacities of through training for SWH installations & maintenance, (6) Create awareness amongst builders, architects, municipal bodies & end users on the benefits of SWH systems, and (7) Provision of rebates as in property taxes, power bills & through additional state subsidies.
Outcome 4- Key Outputs this Reporting Period: Outcome 2.2: Enhanced awareness and capacity of the targeted end users and building sector professionals to consider and integrate SWH systems into different types of buildings (or into other promising new market segments/applications).
• Guidelines for installation of SWH systems in multi storey buildings are finalized. Solar Water Heaters Users manual reprinted for distribution. Installers training manuals were prepared in nine different languages and disseminated.
Outcome 5- Key Outputs this Reporting Period: Outcome 2.3: Increased demand for SWH systems based on availability of attractive end user financing mechanisms and/or other delivery models.
As per MNRE records the annual installed collector area of SWH systems was 1.5 million sq. m. during April 2012 to March 2013.
Outcome 6- Key Outputs this Reporting Period: Outcome 2.4: A certification and quality control scheme applicable for the respective national conditions adopted and enhanced capacity of the supply chain to offer good quality products and services promoting a sustainable SWH market.
Three testing facilities are operational at test centres namely Solar Energy Center, Gurgaon; Regional Test Center, Pune & Regional Test Center, Hamirpur. The facility is open to the manufacturers to test their SWH system/ components for complying with the “minimum efficiency specifications” (for ETCs) and BIS standards for FPCs systems.
Outcome 7- Key Outputs this Reporting Period: Outcome 2.5: The provided support institutionalized and the results, experiences, and lesson learnt documented and disseminated (including monitoring, learning, evaluation, and other feedback for adaptive management).
• A ‘National Workshop on Solar Water Heater systems’ captures the impacts made by the project, and deliberates on ways to sustain the positive outcomes. Key stakeholder contributions to the project were identified and rewarded through awards in categories of Municipal corporations, manufacturers, entrepreneurs in ESCO mode, industry exporting SWH systems, State Nodal Agency, and donor partners. • The Terminal Evaluation of the project was completed in June 2013, and evaluated on the key parameters set by the GEF guidelines. A rating of SATISFACTORY was given. • A closure report has been prepared that compiles the project implementation process and the achievements vis-à-vis the outcomes.

IMPLEMENTATION PROGRESS RATING

IP rating: Please review the Implementation Progress page of this APR/PIR and then answer the questions below. An overall IP rating will be generated based on your answers.	
1 Please rate the progress in delivery of outputs. For example, do the annual outputs represent sufficient progress in order to achieve the project outcomes (see DO page of this APR/PIR)?	
2 Please rate the efficiency in delivery of outputs. For example, in this reporting period are budget resources being spent as planned? (i.e. is project delivery on target?)	
3 Please rate the quality of risk management. For example, in this reporting period were project risks managed effectively?	
4 Please rate the quality of adaptive management. For example, in this reporting period were actions taken to address implementation issue identified in the APR/PIR last year?	
5 Please rate the quality of monitoring and evaluation. For example, in this reporting period were sufficient financial resources allocated to project monitoring and evaluation	
Project Manager/Coordinator: Is the person managing the day to day operations of the project.	
MANDATORY RATING MUST BE PROVIDED for projects under implementation in one country or regional projects where appropriate.	
Please justify your rating and address the following points in your comments. Please keep word count between 500 words minimum and 1200 words maximum.	
1.	**Explain why you gave a specific rating.**
2.	**Summarize annual progress and address timelines of projec output/activity completion in relation to annual workplans.**
3.	**Outline the general status of project expenditures in relation to annual budgets, the effectiveness of project management units in guiding project implementation, and the responsiveness of the project board in overseeing project implementation.**
Overall 2012 Rating	(HS) Highly Satisfactory
2013 Rating	Highly Satisfactorily
Comments	During 2012-2013, the installed collector area of SWH systems was 1.5 million sq. m, which was marginally greater than the previous year when installed collector area was 1.1 million sq. m. An sms campaign used to publicize the toll free helpline was sent to 5 lakh sms, resulting in an increase in callers who were informed on the technical & financial benefits of SWH. A whole set of knowledge products developed under the project was officially released at a National Workshop held in August 2012. These included installation guides for SWH installers published in 9 different Indian languages: training manuals for SWH consultants, trainers &

	industrial applications; Case studies of SWH use [Health, & Educational sectors]. Awards to various stakeholders e.g. Municipal Corporations, Manufacturers, Entrepreneurs in ESCO mode, Industry exporting SWH systems, State Nodal Agencies and donor partners and best consultant were also given away for their outstanding achievements in the year. A project website – www.solarwaterheater.gov.in was also launched where all relevant information on the technology, incentives and manufacturers database has been uploaded. The website serves as a key source of information of SWH users & other stakeholders. The useful application of SWH systems for provision of hot water, replacing use of furnace oil has been showcased in 2 industrial units in Chennai, where the project has supported through a 15% technical grant ESCO mode for O&M of the systems. A CDM PoA project was registered with UNFCCC to revenue generated under new financing mechanism to be used for providing after sales services & performance guarantee to the users for the lifetime of the systems. It is, however, to be noted that completing all the activities proposed in 2012 with 100% budget spent has been considered to be an over achievement by the IP and thus could be considered as highly satisfactorily.
UNDP Country Office Programme Officer: Is the UNDP programme officer in the UNDP country office who provides oversight and supervision support to the project.	
MANDATORY RATING MUST BE PROVIDED for projects under implementation in one country. Not necessary for regional or global projects.	
Please justify your rating and address the following points in your comments. The QORs and delivery data in the ERBM portfolio project monitoring report should inform your rating. Please keep word count between 500 words minimum and 1200 words maximum.	
1.	**Explain why you gave a specific rating. If your rating differs from the rating provided by the project manager please explain why.**
2.	**Summarize annual progress and address timeliness of project output/activity completion in relation to annual workplans.**
3.	**Outline the general status of project expenditures in relation to annual budgets, the effectiveness of project management units in guiding project implementation, and the responsiveness of the project board in overseeing project implementation.**
Overall 2012 Rating	Satisfactory
2013 Rating	(HS) Highly Satisfactory
Comments	During 2012-2013, almost all the activities planned were completed and financial targets met. UNDP India office contributed 25,000 USD to fill in the gap to conduct project terminal evaluation.

	During the reporting period, the installed collector area of SWH systems was approximately 1.5 million sq. m, which was slightly greater than the previous year, however, three times that of the base year. Awareness was enhanced through sms campaign [500,000 sms] and toll free line made active, and the website periodically updated, sms campaign resulted in an increase in callers enquiring about SWH. A 'National Workshop on Solar Water Heating Systems' was conducted which was presided by Minister, Ministry of New and Renewable Energy who also released knowledge products and handed over awards to awardees. The knowledge products released include Installers guide for SWH published in 9 different Indian languages, training manuals for SWH consultants, trainers & industrial applications; case studies of SWH use [Health & Educational sectors]. Awards to various stakeholders e.g. Municipal Corporations, Manufacturers, and Entrepreneurs in ESCO mode, Industry exporting SWH systems, State Nodal Agencies and donor partners and best consultant were also given away for their outstanding achievements in the year. Awards and awardees are as given below; **1.** Best Work done by Municipal Corporation/Municipality in implementation of mandatory provision of SWH in functional buildings • Joint Award for Northern Region – Panchkula, Haryana & Gurgaon, Haryana • Joint Award for S-W Region - Kalyan Dombivali Municipal Corporation, Kalyan(West) & Thane Municipal Corporation, Panchakhadi. **2.** Best Manufacturer/Channel Partner having Market Development Network • M/s Sudarshan Saur Shakti, Aurangabad, Maharashtra **3.** Best Supplier/Entrepreneur having done projects in ESCO mode • M/s Solar Hitech Geyser, Bangalore with M/s Aspiration Energy Pvt. Ltd. Chennai **4.** Best Manufacturer having installed maximum collector area during 2011-12 • M/s Racold Thermo Limited,Chakan, Pune **5.** Best Industry having exported maximum number of collectors during last three years & also having done innovative work in improving quality product • M/s Emmvee Solar System Pvt. Ltd., Bangalore **6.** Best Work done by SNA for promoting SWHs during 2011-12 • Northern - Central region : Haryana Renewable Energy Development Agency (HAREDA) • N-E & Himalayan region : H.P. Energy Development Agency (HIMURJA), • Southern & Western region : Maharashtra Energy Development Agency (MEDA), **7.** Award for Significant Contribution made in UNDP-GEF Global Solar Water Heating Project • ICPCI, Mumbai **8.** Best Performed Consultancy Organization in UNDP-GEF Global Solar Water Heating Project • M/s Greentech Knowledge Solutions, Delhi

	UNEP and other participating countries in Global Solar Water Heater project were invited. Representative from Mexico participated in the event and made a presentation. A project website – www.solarwaterheater.gov.in was also formally launched where all relevant information on the technology, incentives and manufacturers database has been uploaded. The website serves as a key source of information of SWH users & other stakeholders. Energy Service Company model was demonstrated at two industrial units namely Wheels India Pvt Ltd., at Padi and Sona Koy Systems Pvt Ltd. at Sriperumbadur, Chennai by ESCO Aspiration Energy Pvt. Ltd. The ESCO operations have run for a year and 4 months respectively. Aspiration energy, a consulting firm is now slowly receiving more such requests. CDM Programme Of Activity (PoA) has been developed for leveraging funds. CDM revenues will go to manufacturers who will use it for funding warrantees and guarantees. The project thus completed all the planned activities and also met the targeted financial delivery. Further UNDP provided 25,000 USD to meet terminal evaluation of the project. Thus a rating of Highly Satisfactory is given to the project.
Project Implementing Partner: Is the representative of the executing agency (in GEF terminology). This would be Government (for NEX/NIM execution) or NGO (for CSO Execution) or an official from the Executing Agency (for example UNOPS).	
RECOMMENDED but NOT mandatory for projects under implementation in one country or regional projects.	
Please justify your rating and address the following points in your comments. Please keep word count between 200 words minimum and 500 words maximum.	
1.	**Explain why you gave a specific rating.**
2.	**Note trends, both positive and negative.**
3.	**Provide recommendations for next steps.**
Overall 2012 Rating	S
2013 Rating	
Comments	
GEF Operational Focal point: Is the government representative in the country designed as the GEF operation focal point.	
MANDATORY RATING MUST BE PROVIDED for projects under implementation in one country. Not necessary for regional or global projects.	
Please justify your rating and address the following points in your comments. Please keep	

word count between 200 words minimum and 500 words maximum.	
1.	**Explain why you gave a specific rating.**
2.	**Note trends, both positive and negative.**
3.	**Provide recommendations for next steps.**
Overall 2012 Rating	
2013 Rating	
Comments	
Other Partners: For jointly implemented projects, a representative of the other Agency working with UNDP on project implementation (for example UNEP or the World Bank).	
RECOMMENDED but NOT mandatory for jointly implemented projects.	
Please justify your rating and address the following points in your comments. Please keep word count between 200 words minimum and 500 words maximum.	
1.	**Explain why you gave a specific rating.**
2.	**Note trends, both positive and negative.**
3.	**Provide recommendations for next steps.**
Overall 2012 Rating	
2013 Rating	
Comments	
UNDP Technical Adviser: Is the UNDP-GEF Technical Adviser.	
MANDATORY RATING MUST BE PROVIDED for ALL projects.	
Please justify your rating and address the following points in your comments. The QORs and delivery data in the ERBM portfolio project monitoring report should inform your rating. Please keep word count between 500 words minimum and 1200 words maximum.	
1.	**Explain why you gave a specific rating. If your rating differs from the rating provided by the UNDP Country Office Programme Officer and/or the Project Manager please explain why.**
2.	**Summarize annual progress and address timelines of project output/activity completion in relation to annual workplans.**
3.	**Outline the general status of project expenditures in relation to annual budgets, the effectiveness of project management units in guiding project implementation, and the responsiveness of the project board in overseeing project implementation.**

UNDP Technical Adviser	
Overall 2012 Rating	(S) Satisfactory
2013 Rating	(S) Satisfactory
Comments	The annual targets were entered and progress towards these targets was monitored on quarterly basis until end of 2012. The project has not prepared AWP for 2013 as there were no remaining funds. In fact the terminal evaluation of the project was commissioned with the grant support from UNDP India. During this reporting period, the project demonstrated Energy Service Company (ESCO) modality at two industrial units. It is less than a year since these are in operation, once data is available, that could be presented. A SWH PoA is now registered with UNFCCC and the project supported capacity building activities as part of this. Three test facilities are operationalized at three locations which are open to the manufactures to test their SWH systems for compliance with “minimum efficiency specifications” (for ETCs) and BIS standards for FPCs systems. The project prepared its closure report and apart from this, studies were undertaken in both the Northern & Southern states to assess the barriers in the effective implementation of GOs & bye laws for use of SWH systems. Further, during this reporting period, Solar Water Heaters User manual was reprinted and also installers training manuals were prepared in nine different languages and disseminated. There is not much gap between MTR and TE, which is hardly within a year, to implement MTR recommendations though the project had demonstrated adaptive management from the beginning. Overall project monitoring and supervision is satisfactory and PSC meetings were regularly conducted. Based on the criteria for IP rating, the project implementation progress can be rated Satisfactory (S).
Highly Satisfactory (HS)	**Project is expected to achieve or exceed all its major global environmental objectives, and yield substantial global environmental benefits, without major shortcomings. The project can be presented as 'good practice'.**
Satisfactory (S)	**Project is expected to achieve most of its major global environmental objectives, and yield satisfactory global environmental benefits, with only minor shortcomings.**
Marginally Satisfactory (MS)	**Project is expected to achieve most of its major relevant objectives but with either significant shortcomings or modest overall relevance. Project is expected not to achieve some of its major global environmental objectives or yield some of the expected global environment benefits.**
Marginally Unsatisfactory (MU)	**Project is expected to achieve its major global environmental objectives with major shortcomings or is expected to achieve only some of its major global environmental objectives.**
Unsatisfactory (U)	**Project is expected not to achieve most of its major global environment objectives or to yield any satisfactory global**

	environmental benefits.
Highly Unsatisfactory (HU)	**The project has failed to achieve, and is not expected to achieve, any of its major global environment objectives with no worthwhile benefits.**

ADJUSTMENTS

Adjustments to Project Milestones, Project Strategy and Risk Management

Key Project Milestones

Have significant delays occurred in the project start, inception workshop, Mid-term Review, Terminal Evaluation or project duration?

No

If yes, were these changes reported in a previous APR/PIR?

Key project milestone	Scope of delay (in months)	Briefly describe change or reason for change	Briefly describe the implications or consequences this has had on project implementation
Project Start (i.e. project document signature date)	Not Applicable		
Inception Workshop	Not Applicable		
Mid-term Review	Not Applicable		
Terminal Evaluation	Not Applicable		
Project Duration (i.e. project extension)	Not Applicable		

Adjustments to Project Strategy

Has the project made any changes to its strategy (i.e. logframe/results framework) since the Project Document was signed?

No

If yes, were these changes reported in a previous APR/PIR?

Change Made to	Yes/No	Briefly describe the change and the reason for that change
Project Objective	No	Not Applicable
Project Outcomes	No	Not Applicable
Project Outputs/Activities	No	Not Applicable

Risk Management

List numbers of critical risks as noted in the ATLAS risk log and briefly describe actions undertaken this reporting period to address each critical risk.

# of Critical Risks (type/description)	**Risk management measures undertaken this reporting period**
Environmental	Not Applicable
Financial	Not Applicable
Organizational	Not Applicable
Regulatory & Strategic	Not Applicable
Others	Not Applicable

Adjustments general comments:

Not Applicable

Finance: cumulative from project start to June 30 2013

DISBURSEMENT OF GEF GRANT FUNDS

How much of the total GEF grant as noted in Project Document plus any project preparation grant has been spent so far? (e.g. PPG + MSP or FSP amount. Do not break down by PPG or project budget.)

Estimated cumulative total disbursement as of 30 June 2013. (i.e.CDR information up to 20 June 2013)	USD 1,997,151
Add any comments on GEF Grant Funds	Not Applicable

DISBURSEMENT OF CO-FINANCING

How much of the total Co-financing as noted in Project Document has been spent so far? Co-financing is the amount committed in the project document for which co-financing letters are available

Estimated cumulative total co-financing disbursed as of 30 June this year. Please breakdown by donor.	Government of India (GoI): USD 10,800,000/ ICPCI: USD 310,000/
Add any comments on co-financing including other types and amounts of additional co-financing such as in-kind, private sector, grants, credits and loans.	As a donor GoI has contributed way above its committed amount of USD 10,800,000/ through subsidies for SWH systems

ACTUAL CO-FINANCING :

ADDITIONAL LEVERAGED RESOURCES

These additional resources can be from the same donors or new donors.

Estimated cumulative leveraged resources as of 30 June 2013	USD 29,200,000
Add any comments on Leveraged Resources.	During the course of the Project, the co-financing contributions made by MNRE in the form of direct subsidy to the SWH was USD 40 million, a figure that exceeds the planned figure by 4 times.

Other Financial Instruments

Does the project provide funds to other Financial Instruments?	Not Applicable
If yes, please discuss developments that occurred this reporting period only.	Not Applicable

Communications and KM

Tell the Story of Your Project and What has been Achieved this Reporting Period

The UNDP/UNEP/GEF GSWH project is the first of its kind where the project components in aligning with the key objectives of the government programme, seeks to promote the use of SWH systems across the sectors of Industrial, Domestic, Hospitality, Hospitals, Educational & other institutions with hot water requirements in low temperature range. The overall objective of the project was to accelerate the market for Solar Water Heater in India.

The project started in 2009 with a 4.5 years duration scheduled to close by mid 2013. During project period 4.56 million m2 of collector area was added, 2.4 million m2 of this addition can be attributed to GEF project. The project thus took the installed capacity of SWH in India from 2.55 million m2 in base year 2008 to 7.11 million m2 as in March 2013. The direct GHG emissions reduction during the project period is 1,656,735 tCO2. When calculated over the 15 year lifetime of the SWH systems the GHG reduction is 24,855,657 tCO2. The project target of 11 million tCO2 was thus exceeded significantly.

During 2012-2013 the installed collector area of SWH systems added was approximately 1.5 million sq. m, which was three times that of the base year 2008-09. This was possible through a number of awareness, training and capacity building programmes. Awareness was enhanced through sms campaign. Nearly 500,000 sms were sent. Toll free line was made active, and the website periodically updated, all of which increased in callers enquiring about SWH.

A 'National Workshop on Solar Water Heating Systems' was conducted which was presided by Minister, Ministry of New and Renewable Energy who also released knowledge products and handed over awards to awardees. The knowledge products released include 'Installers guide for SWH' published in 9 different Indian languages, training manuals for SWH consultants, trainers & industrial applications; case studies of SWH use [Health & Educational sectors]. Awards to various stakeholders e.g. Municipal Corporations, Manufacturers, Entrepreneurs in ESCO mode, Industry exporting SWH systems, State Nodal Agencies and donor partners and best consultant were also given away for their outstanding achievements in the year. Awards and awardees are as given below;

1. Best Work done by Municipal Corporation/Municipality in implementation of mandatory provision of SWH in functional buildings awarded jointly to Northern Region – Panchkula, Haryana & Gurgaon, Haryana and S-W Region - Kalyan Dombivali Municipal Corporation, Kalyan(West) & Thane Municipal Corporation, Panchakhadi;
2. Best Manufacturer/Channel Partner having Market Development Network to M/s Sudarshan Saur Shakti, Aurangabad, Maharashtra
3. Best Supplier/Entrepreneur having done projects in ESCO mode to M/s Solar Hitech Geyser, Bangalore with M/s Aspiration Energy Pvt. Ltd. Chennai
4. Best Manufacturer having installed maximum collector area during 2011-12 to M/s Racold Thermo Limited,Chakan, Pune
5. Best Industry having exported maximum number of collectors during last three years & also having done innovative work in improving quality product to M/s Emmvee Solar System Pvt. Ltd., Bangalore
6. Best Work done by SNA for promoting SWHs during 2011-12 to Northern - Central region : Haryana Renewable Energy Development Agency (HAREDA, N-E & Himalayan region : H.P. Energy Development Agency (HIMURJA), Southern & Western region : Maharashtra Energy Development Agency (MEDA),
7. Award for Significant Contribution made in UNDP-GEF Global Solar Water Heating Project to ICPCI, Mumbai
8. Best Performed Consultancy Organization in UNDP-GEF Global Solar Water Heating Project to M/s Greentech Knowledge Solutions, Delhi

Representative from Mexico participated in the event and shared Mexico experience. A project website – www.solarwaterheater.gov.in was also formally launched. Website has relevant information on the technology, incentives and manufacturers database has been uploaded. The website serves as a key source of information of SWH users & other stakeholders. List of documents uploaded on website are given below;

1. User's Handbook on Solar Water Heater
2. Online Solar Water Heater Calculator
3. Specific Website on solar Water Heater http://www.solarwaterheater.gov.in
4. Toll Free National Helpline Number for solar water heater 1800 2 33 44 77
5. Electronic newsletter on monthly basis & a compendium on the same
6. Guidelines on installation of SWH in multi-storey buildings
7. Awareness programmes/seminars organized in different sectors
8. Training programmes proceedings for installers, builders & local consultants
9. Training manuals for installers/technicians in 9 regional languages
10. Fact Sheets & Reference manuals for Hospitality sector
11. On-line tools for deciding about RE technology in Hospitality sector
12. Case studies/success stories of RE technologies in various sectors
13. DPRs for industrial, healthcare & educational sectors, urban clusters & Himalayan Region
14. Potential Assessment in different sectors under various scenarios
15. Articles and success stories published in print & vernacular media
16. Model reports on manufacturing of FPC and ETC based Solar water heating systems and entrepreneurship development
17. Final reports on assignments related to Himalayan Region, Industries, Urban Clusters, Educational & Healthcare sectors, Hospitality sector etc.
18. Low cost solar water heater developed by M/s SKM Design, Gurgaon
19. Software for data management & monitoring of installations in field
20. GOs / building by-laws amended by various MCs/ULBs

During the reporting period, the project was able to demonstrate Energy Service Company model at two industrial units namely Wheels India Pvt Ltd., at Padi and Sona Koy Systems Pvt Ltd. at Sriperumbadur, Chennai by ESCO Aspiration Energy Pvt. Ltd. The ESCO operations have run for a year and 4 months respectively. Aspiration energy, a consulting firm is now slowly receiving more such requests. CDM Programme Of Activity has been developed for leveraging funds. CDM revenues will go to manufacturers who will use it for funding warrantees and guarantees.

Adaptive Management this Reporting Period

No specific adaptive management strategy for this reporting period.

Lessons Learned

1. The lessons learnt from the ESCO operations in the 2 industrial units at Chennai show that essential pre-conditions have to be met for successful operations:
    - Financing of ESCO business from FIs or equity partner is essential. Lack of low interest loans is a key barrier.
    - ESCOs are most suited for those industrial units that are entrenched in running their own production lines and need expertise to improve their energy efficiencies and its consumption
    - The SWH system integration with the existing machinery and processes must be smooth & risk free
    - The initial costs invested by the clients should low with paybacks not more than a year and half, and minimal downtime for installations.

2. PMC must have documentation specialist either in-house or long term retainership basis so that quality of the reports can be enhanced, more case studies captured and disseminated periodically. Process story would have helped others to read and learn from the achievements and shortcoming of the solar water heater project.

3. UNEP started with good engagement with six participating countries in 2009 in Tunisia, but continuous follow up of the engagement would have helped us to learn from other countries or provide our experiences to them. However, an opportunity still exists for them compile the experiences as of now immediately and share it with partners and provide a platform for continuous engagement.

PARTNERSHIPS

Civil Society Organisations/NGOs

Not Applicable

Indigenous Peoples

Not Applicable

Private Sector

Not Applicable

GEF Small Grants Programme

Not Applicable

Other Partners

ICPCI as a co-funding agency and a number of consulting firms

PROGRESS IN ADDRESSING GENDER EQUALITY

Has a gender or social needs assessment been carried out?

No

If a gender or social assessment has been carried out what are the findings?

No

Does this project specifically target women or girls as direct beneficiaries?

In absence of Solar Water Heaters in peri-urban and rural areas, households alternatively make use of biomass stoves to heat water. Task of heating water often falls on women. Solar Water heaters in peri-urban and rural areas perhaps would have benefited women.

Have there been any changes in specifically targeting women or girls as direct beneficiaries this reporting period?

Not Applicable

If yes, please explain:

-

Please discuss any of the points above further or provide any other information on the project's work on gender equality undertaken this reporting period

Some points to consider: impact of project on daily workload of women, # of jobs created for women, impact of project on time spent by women in household activities, impact of project on primary school enrolment for girls/boys, increase in women's income etc. Be as specific as possible and provide real numbers (e.g. 100 women farmers participating in sustainable livelihoods programme).

ENVIRONMENTAL OR SOCIAL GRIEVANCE

What environmental or social issue was the grievance related to?

No

What is the current status of the grievance?

Not Applicable

How would you rate the significance of the grievance?

Not Applicable

Please describe the on-going or resolved grievance noting who was involved, what action was taken to resolve the grievance, how much time it took, and what you learned from managing the grievance process (maximum 500 words). If more than one grievance was addressed this reporting period, please explain the other grievance (s) here:

Not Applicable