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Basic Data / Basic Project & Finance Data

Basic Project Information

PIMS ID	3908
Project Title	Promoting Renewable Energy in Mae Hong Son Province

Project Contact Information

Role	Name	Email Address
Project Implementing Partner	UNDP Direct Implementation Modality (DIM), N.A.	N.A.
Is the Project Implementing Partner a civil society organization/non-governmental organization?	No	
Project Manager/Coordinator	Ms. Sorat Phutthaphithak (PM since June 2014)	sorat.phutthaphithak@undp.org
UNDP Country Office Programme Officer	Dr. Sutharin Koonphol	sutharin.koonphol@undp.org
GEF Operational Focal Point (OFP)	Mr. Kasemsan Chinnawaso Permanent Secretary, Ministry of Natural Resources and Environment, Thailand	N.A.
Other Partners	Office of the Governor, MHS Province Provincial Energy Office , MHS Province Department of Alternative Energy Development and Efficiency (DEDE), MHS Province	N.A.

Terminal PIR

Is this the terminal PIR that will serve as the final project report?	No
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General Comments on Basic Data

Please insert additional comments not explained above.

Project expenditures were relatively low in the reporting period, as deliverables of 2 major RE systems had to be put to an end and modification of activities/results needed to be identified and approved by the Project Board and UNDP GEF. The delivery as of 30 June 2016 was at US\$ 298.658 [Expense includes commitment]. For more details on progress, see other sections below.

Development Objective Progress / Progress Toward Development Objectives

Objective / Outcome: Description of Objective / Outcome	Description of Indicator	Baseline Level	Target Level at end of project	Level at 30 June 2015	Level at 30 June 2016
<p>Project Objective: <i>To overcome barriers to the provision of Renewable Energy (RE) services in integrated provincial renewable energy programmes in Thailand</i></p>	<p>Objective Indicator 1: <i>Increase of power generation capacity and usage from RE systems in MHS both on-grid and off-grid</i></p>	<p><i>RE power generation capacity in MHS amounts to 29,220 MW (on grid) and 255 kW (off-grid). (June 2014)</i></p>	<p><i>By the end of the project: RE power generation capacity in MHS amounts to 29,720 MW (on grid) and more than 315 kW (off-grid); Additional RE power generation capacity of 500 kW (solar farm) and 60 kW (off-grid hydro) and several solar applications realized.</i></p>	<p><i>RE power generation capacity in MHS amounts to 29,220 MW (on grid) and 255 kW (off-grid). (June 2015)</i></p>	<p><i>RE power generation capacity in MHS amounts to:</i></p> <ul style="list-style-type: none"> - 29,220 MW (on grid) and - 1,270 kW (off-grid) consisting of: <ul style="list-style-type: none"> a) existing baseline capacity of 255 kW; b) 10 off-grid solar farms of array of 100 kW each, total 1,000 kW; c) 15.21 kW incremental capacity as realized under the project. Project's additional RE power generation capacity consists of: <ul style="list-style-type: none"> - 2.5 kW (1 on-grid solar rooftop), - 12.36 kWp (103 SHSs rehab*120 Wp) - 0.35 kWp (207 solar lanterns)
	<p>Objective Indicator 2: <i>Models for RE generation & application which can be replicated in other areas demonstrated</i></p>	<p><i>No new models for RE generation & application.</i></p>	<p><i>At least 3 new models for RE generation & application developed and operational. Models ready to be replicated in other areas (hydro, solar and biodigesters).</i></p>	<p><i>Several models related to RE generation & application, service delivery, fund management and sustainable utilization of RE were sketched out but not finalized. For instance policy support for RE applications & energy access in forest reserved area; facilitation to local government in RE technologies, operation & maintenance (O&M); community management for productive uses of RE technologies; women empowerment in ICS realization and promotion; RE revolving fund (Clean Energy Fund) for income generation and livelihoods improvement for the marginalized groups.</i></p>	<p><i>4 new RE models developed & tried out, replicable:</i></p> <ul style="list-style-type: none"> - Solar rooftop public-private-NGO partnership, - ICSs: realization & adoption, - Biodigesters co-financing model with individual farms, - SHSs rehabilitation and solar lanterns business model. <p><i>3 new models are on-going:</i></p> <ul style="list-style-type: none"> - Promotion of ICS & women entrepreneurs, - SHSs rehabilitation and sale of solar lantern in extreme poverty areas, - RE financial support model in extreme poverty areas (endorsement of operational model).

Objective / Outcome: Description of Objective / Outcome	Description of Indicator	Baseline Level	Target Level at end of project	Level at 30 June 2015	Level at 30 June 2016
Outcome 1: Strengthened institutional, organizational and social capacity results in planning, management and implementation of integrated RE programmes in MHS	1) No. of RE projects proposed by government agencies in line with provincial plan	None	At least 2 RE projects proposed by government agencies in line with provincial plan	3 RE (micro-hydro power) projects were proposed and developed by 3 local governments (Tambon Administrative Organizations or TAOs), in line with local and provincial plans. TAOs will be the owner of the plants. <i>(Completed)</i>	15 RE projects (1 SHS + 14 biodigesters) were developed & proposed to the project by local agencies, in line with local and provincial dev't strategies and co-financing by submitters. <i>(Completed)</i>
	2) No. of working RE management models established	None	At least 3 management models established (off-grid hydro, biodigesters, solar)	A management structure for off-grid micro-hydro power was established. The agreed structure includes responsibilities/ tasks of provincial & local concerned agencies and was agreed with participation of local communities.	3 management models established: <ul style="list-style-type: none"> - school biodigesters operation & maintenance, - management of solar rooftop & EE measures in gov't building, - management of a community RE learning center.
Outcome 2: Financially sustainable RE systems operational in MHS	3) No. of on-grid solar farm projects approved, installed and operational in MHS by end of 2016	3 (total 2,880 kW- June 2014)	1 additional on-grid solar farm project approved, installed and operational in MHS by end of 2016 (capacity 500 kW).	2 potential locations for on-grid solar farms were selected and under land legal review.	<i>None (Permit not obtained)</i> => proposed to modify output to installation of solar systems for 2 off-grid schools (proposed by Project Board on 24 May 16 and pending UNDP-GEF approval) (A solar farm development plan (with short feasibility study, financial plan, co-investment model btw Agri. Coop and ThaiOil Group, a large energy investment firm, developed & submitted to Energy Regulatory Commission (ERC) for permit to install and operate. But permit not obtained by lucky lots draw on 21 Apr 2016)
	4) No. of SHS rehabilitated in MHS by end of 2016	0	100 SHS rehabilitated in MHS by end of 2016 (100*120 Wp)	0	103 SHSs rehabilitated

Objective / Outcome: Description of Objective / Outcome	Description of Indicator	Baseline Level	Target Level at end of project	Level at 30 June 2015	Level at 30 June 2016
					(103*120 Wp = 12.36 kWp) (Completed)
	5) No. of solar lanterns sold in MHS by end of 2016	0	200 solar lanterns sold in MHS by end of 2016 (200*2.5W)	2 solar lanterns demo models were selected and tried-out to find the most suitable one for MHS off-grid poverty stricken areas, in term of technology application and affordability.	207 lanterns sold (95* 3.3 W + 112 * 0.35 W = 313.5 + 39.2 =352.7 W = 0.35 kW) (Completed)
	6) No. of biodigesters installed at schools, SMEs and farms in MHS by end of 2016 with	33 (at SMEs/hh – June 2014)	20 additional biodigesters at schools, SMEs and farms installed and operational in MHS by end of 2016 with support from project (average size 8 m3)	3 potential locations for biodigesters at schools and another 9 at farms were identified and assessed.	Additional 31 biodigesters size 8 m3 installed (11 in schools + 20 at farms) (Completed)
	7) No. of off-grid micro-hydropower projects approved, installed and operational in MHS by end of 2016	9 (255 kW – June 2014)	2 off-grid hydropower plants approved, installed and operational in MHS by end of 2016 (2 * 30 kW).	3 off-grid micro-hydro power projects were approved by MHS province. 2 out of 3 projects are under investigation of land use permit by MNRE.	None (Permit not obtained) => proposed to modify activity to SHSs rehabilitation: 91 units by 2017 additional RETs & others will be installed, if project period extended to end of 2017 (proposal by Project Board on 24 May 16, pending UNDP-GEF approval) (Additional documents i.e. detailed construction blueprints and EIA developed & submitted to DNP. Permit request to install & operate 5.58 kW MHP system rejected by DNP on 1 Feb 2016; the second for 10.29 kW rejected on 2 May 2016)

Objective / Outcome: Description of Objective / Outcome	Description of Indicator	Baseline Level	Target Level at end of project	Level at 30 June 2015	Level at 30 June 2016
	8) No. of solar rooftop installations approved, installed and operational in MHS by end of 2016	0	10 solar rooftop systems approved, installed and operational in MHS by end of 2016 (with support from the project) (10 * 200 W)	0	<p>One 2.5 kW solar rooftop system approved, installed & operational at gov't building (prov. hospital); power generation capacity = 3,580 kWh/year, savings THB 17,900 of electricity fee</p> <p>None installed at individual building (Change of gov't policy, no longer incentives for this kind of systems => change from HHs to hotels/ SMEs)</p> <p>Only 4 potential SME clients interested but not yet decided</p>
	9) No. of EE projects in gov. buildings approved, implemented and operational in MHS by end of 2016	0	1 EE project in gov. building approved, implemented and operational in MHS by end of 2016 (RE capacity 600 W savings)	0	Not implemented yet. EE savings potential in hospital currently being analyzed.
	10) No. of villages in which ICS have been tried out and are being used in MHS by end of 2016	0	10 villages in which ICS have been tried out and being used in MHS by end of 2016 (50 systems)	14 villages of 3 ethnic groups (Tai Yai, Karen, Lanna), located in peri-urban and rural areas, in which 55 ICS have been tried out and are being used. (Completed)	14 villages of 3 ethnic groups (Tai Yai, Karen, Lanna), located in peri-urban and rural areas, with 130 ICS tried out & being used. (30 ICSs were 80% co-funding by villagers) (Completed)
Outcome 3: Technical support is available locally for the development, management and maintenance of	11) No. of village technicians trained to operate and maintain off-grid hydropower plants	No knowledge (center) or experts easily available	4 village technicians trained to operate and maintain off-grid hydropower plant by end of 2016	10 technicians (8 technicians from 3 TAOs and 2 from Provincial Energy Office) were trained to carry out technical field assessments to determine potential for off-grid micro-hydro power.	<p>None</p> <p>Proposed modification of output from MHP to SHSs trainings (proposed by Project Board on 24 May 2016, awaiting UNDP-GEF's approval)</p> <p>Proposed activity: trainings to 100 local technicians & vocational/college students</p>

Objective / Outcome: Description of Objective / Outcome	Description of Indicator	Baseline Level	Target Level at end of project	Level at 30 June 2015	Level at 30 June 2016
RE applications in MHS					and 200 villagers on solar systems, SHSs rehabilitation & maintenance
	12) No. of village technicians trained to maintain rehabilitated SHS	0	10 village technicians trained to maintain rehabilitated SHS by end of 2016	0	<ul style="list-style-type: none"> - 10 village/TAO technician trained on SHSs rehabilitation - 1,215 villagers in 27 villages (7 sub-districts of 5 districts), trained on solar systems & maintain rehabilitated SHS (Completed)
	13) No. of technicians trained on EE measures and solar rooftop installation	0	2 government technicians trained on EE measures and solar rooftop installation	0	7 government technicians/ personnel trained on EE measures and solar rooftop installation in Feb 2016 (Completed)
	14) No. of users trained in the operation and maintenance of biodigesters	0	20 users of biodigesters trained to operate and maintain the systems	0	155 users of biodigesters (schools & farms) trained to operate and maintain the systems (Completed)
	15) An improved design of an ICS suitable for situation in MHS	None	Improved design for ICS suitable for MHS finalized	Improved design for ICS suitable for MHS finalized and being used among 55 project volunteers. (Completed)	Completed since 2015
Outcome 4: Policies facilitate up-scaling and replication of RE systems in Thailand	16) Documented and published experiences/lessons learned from all technologies implemented by end of 2016	None	By end of 2016 all lessons learned documented and published	0	<ul style="list-style-type: none"> - 2 lessons learned on MHP & ICS completed & presented; - 1 ICS article published on UNDP website; - 1 video (Thai) on ICS operational mechanism completed
	17) Centre of learning approved and operational in MHS by end of 2016	None	Centre of learning approved and operational by end of 2016	0	Center of learning approved (concept, management plan & planned activities, learning activities both classroom/ outdoor & learning products)

Objective / Outcome: Description of Objective / Outcome	Description of Indicator	Baseline Level	Target Level at end of project	Level at 30 June 2015	Level at 30 June 2016
	18) <i>Guidelines published</i>	None	At least 2 guidelines for replication published e.g. a) on management models for off-grid applications b) incentive schemes/financial model for RE	One guideline for local technicians on technical field assessments to determine potential for off-grid micro-hydro power was published and 700 copies disseminated to provincial and local concerned agencies and TAOs in MHS.	3 guidelines published & disseminated to concerned agencies & users - Guideline on management and maintenance of solar home systems - Guideline and management, operation & maintenance of biodigesters system - Guideline on O&M of solar rooftop <i>(Completed)</i>
	19) <i>No. of lessons learned included in policy making at central level</i>	0	At least 2 important lessons learned included in policy making at central level	Information on several topics and themes of important lessons learned i.e. on micro-hydro power policy, financial support mechanisms, and appropriate service delivery models for accessible and affordable RE technologies in poverty stricken areas for off-grid marginalized groups have been gathered. This information will be used in coming year to determine key learnings for inclusion in policies at central level.	2 lessons learned on MHP policy & regulations in protected area, and key success factors for the adoption of ICS presented at sub-national level and reported to national level. During the remaining time of the project, the lessons learned will be translated into concrete policy recommendations. For this a consultant will be hired with good connections at the policy level.

Development Objectives Rating

<p>Project Manager / Coordinator is the person managing the day to day operations of the project.</p>	<p>MANDATORY RATING MUST BE PROVIDED for projects under implementation in one country or regional projects where appropriate.</p> <p>Please review the cumulative progress toward end-of-project targets as noted in the DO tab of this PIR and provide a rating on this progress. Please consider the following questions before selecting a DO rating:</p> <ol style="list-style-type: none"> 1. Have all the results framework/logframe indicators been updated to end of June this year? Is sufficient evidence available to confirm the data provided? Has this evidence been uploaded to the PIR? If indicators could not be reported on please explain why in the DO rating comments section. 2. Do the indicators adequately measure cumulative progress toward the project objective and outcomes? If not then please explain the mitigating circumstances in the DO rating comments. 3. Consider the likelihood that the project will achieve its stated objective and outcomes and end-of-project targets by the planned project closure date. 4. Consider whether sufficient measures will be in place by project closure to facilitate the long-term sustainability of results (e.g. exit strategy, new partnerships, indirect GEBs generated in the ten years after closure, additional co-financing, etc.). <p>Please justify your rating and address the following points in your comments. Please keep word count between 500 words minimum and 1200 words maximum.</p> <ol style="list-style-type: none"> 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.
	<p>Moderately Satisfactory (MS)</p> <p>Overall, project is expected to achieve only some of its major global environmental objectives, due to factors beyond the control of the project team. Decisions taken by the central government made realization of some key renewable energy systems, such as the solar farm and micro-hydro installations, not possible.</p> <p>1. Project Objective</p> <p>The overall Project Objective is to “overcome barriers to the provision of renewable energy (RE) services in integrated provincial RE programmes in Thailand, in particular in Mae Hong Son (MHS) Province.” This Objective has 2 indicators:</p> <ul style="list-style-type: none"> • Project Objective Indicator (POI) 1: Increase of power generation capacity and usage from RE systems in MHS both on-grid and off-grid, with target at additional RE power generation capacity of 500 kW (solar farm) and 60 kW (off grid hydro) and several solar applications realized; and • Project Objective Indicator (POI) 2: Models for RE generation & application which can be replicated in other areas demonstrated, with target at: at least 3 management models established (off-grid hydro, biodigesters, solar) <p>The project successfully achieved POI 2 with 4 (from expected 3) new RE models developed, tried out and ready for replication (solar rooftop at government building, ICS, biodigesters solar lanterns and SHS rehab). Besides, the project is on progress to build up 2-3 additional models within this year.</p> <p>For POI 1, only some renewable energy systems could be realized. Considering the targets on ‘increase power generation capacity,’ the project did not manage to produce the expected RE generation capacity of 560 kW from micro-hydro and a solar farm. This is due to the refusal from the central government to give permits for the installation and</p>

operation of a solar PV farm (500 kW) and 2 micro-hydro power (MHP) plants (60 kW). There was also a change in policy at central level regarding solar rooftop systems. The government does not give any incentive anymore for this kind of systems, which pushes the payback period up to 10 years. As a consequence, it is not very attractive anymore from a financial perspective for SMEs to invest in this kind of systems.

The realization of 2 kW in solar rooftop systems was achieved but in a different way. While initially it was the plan to install 200 W at 10 locations each (2 kW in total), the target was achieved by installing 2.5 kW at a hospital. In addition, 103 units of solar home systems were rehabilitated (12.36 kWp), 207 units of solar lanterns were sold (0.35 kW), 31 biodigesters installed and 130 improved cookstove (ICS) sold.

2. Outcome/component details

Considering achievements per outcome, and with comparison to last year performance, significant progress has been made as the project achieved 12 out of total 19 outcome indicators.

Results under **Outcome 1** (strengthened institutional, organizational and social capacity results in planning, management and implementation of integrated RE programmes in MHS) were achieved. The project received RE development proposals and plans over the expected target. All were in line with provincial development strategy. This proved that local institutions were now strengthened and capable in planning, management and implementation. Still, the project has continued with the support just to keep momentum with local stakeholders.

Regarding **outcome 2**, it was noted that the project could overcome barriers to the provision of most off-grid RE services, but not on-grid and off-grid systems that need permits/approval from the central government. The off-grid RETs (ICS, biodigesters at schools and households and SHS rehabilitation & solar lanterns) and on-grid RET (solar rooftop) which don't need permits from the central government, were on track and achieved the targets. But the on-grid RE (solar farm) and off-grid systems (micro-hydro) that need permits/approval from the central government could not be realized, despite all efforts from all stakeholders involved. Consequently, only some global environmental benefits will be achieved within the project timeframe.

Under outcome 2 (financially sustainable RE systems operational in MHS), the project completed 5 out of total 8 objective indicators, i.e. targets on 1) biogas, 2) SHS rehabilitation, 3) solar lanterns, 4) improved cookstoves, 5) solar rooftop (modified) were achieved, while targets for 1) solar farm, 2) MHP could not be achieved and 1) target for EE measures is being implemented (EE potential is being analyzed).

For the systems under component 2 which could not be realized, the Project Board proposed on 24 May 2016 to modify the activities as follow:

- On-grid solar PV farm => Off-grid solar PV system for 2 most remote schools;
- Off-grid MHP systems => 91 Off-grid SHS rehabilitation (additional target);
- In addition, the Project Board proposed to realize 1-2 demo solar PV rooftop systems for SMEs.

In **Outcome 3** (technical support is available locally for the development, management and maintenance of RE applications in MHS), all planned TA was provided except one related to micro-hydro trainings. PB proposed in May 2016 to revise this activity, to replace it with

the trainings to 100 local technicians & vocational/college students and 200 villagers on solar systems, SHSs rehabilitation. Currently awaiting UNDP-GEFs approval.

Progress on **Outcome 4** was on track. The project completed development of 3 guidelines (from expected results of at least 2 guidelines). Two lessons learned on improved cookstoves (ICS) and MHP were presented to government senior officials at sub-national level. Management plan of the RE learning center was endorsed by the PB in May 2016. Development of integrated RE curriculum to be used by 8 pilot schools, other learning products, the remaining lessons learned and additional project's guidelines/manuals are on scheduled. During the remaining time of the project a consultant will be involved to prepare policy recommendations and support inclusion of the policy recommendations in the national policy.

The cumulative project financial delivery as of 30 June 2016 is US\$ 298,658. The financial delivery is less than expected due to the fact that the permit for solar farm and MHP was not provided by the central government.

The sustainability of the systems realized have been ensured by training the users, staff from local government (TAO, Provincial Energy Office and other stakeholders) and by including renewable energy in the energy planning of local governments. Also, renewable energy will be included in curriculum of local technical colleges.

3. Risks:

The risks the project encountered and actions taken to mitigate the risks include:

- Lack of Policy Support. Lack of policy enabling factors to execute development activities in relation to MHP, solar PV farm and solar rooftop. MHS has more challenging development complexities compared to other provinces. It is the poorest province in Thailand and lowest in Human Development Index. Physical isolation, very limited agricultural area (3.5% of the total area), low income, low population with scattered settlements on highlands, low to no education among ethnic people who are the majority (60%) of the population, strong enforcement of environmental protection laws to 90% of the total area of the province are the main barriers to the RE services delivery in MHS. Under such challenges, 'special policy and legal support' from the government for RE service provision is a must. The 'one size fits all' present policy cannot facilitate high-cost RE investment on solar farm and solar rooftop by private firms or individuals. For the off-grid MHP, the government should also have a special policy with legal support and clear criteria for such system to be installed and operated in off-grid communities resided in the forest protected areas. => Experiences gained from the project's promoted RETs, both attained and unattained ones, will be documented in the project's lessons learned; highlighted issues on site assessments, participation & engagement of local stakeholders/ communities in planning and development of RE systems, proposals development, submission procedures for permits, complexities encountered, adaptation management and management models for replications. All lessons learned, successful and unsuccessful ones, will be shared with concerned agencies at local, sub-national, and national levels at the end of the project.
- Limited Capacity of Provincial Project Partners. The project's provincial key partners have limited number and capacity to fully support the project. Few have sufficient knowledge/skills in relation to the promotions and applications of RE technologies. PEO, the key project's focal point, has only 2 staff responsible for all technical aspects of

	<p>energy development in the province. PEO has a small budget for RE related promotion and realization at ground level. => The project built up technical and management capacities to provincial & local focal points and institutions. Some technical tasks, such as trainings, in field areas were carried out, in close cooperation with technicians from local governments and Army.</p> <p>4. Action Plan</p> <p>As some of the envisaged energy systems cannot be realized (i.e. solar farm and micro-hydro) the PMU and Project Board discussed extensively possible alternative. Based on these discussions and review by experts, the project board requested revision of activities.</p>
<p>UNDP Country Office Programme Officer is the UNDP programme officer in the UNDP country office who provides oversight and supervision support to the project.</p>	<p>MANDATORY RATING MUST BE PROVIDED for projects under implementation in one country. Not necessary for regional or global projects.</p> <p>Please review the cumulative progress toward end-of-project targets as noted in the DO tab of this PIR and provide a rating on this progress. Please consider the following questions before selecting a DO rating:</p> <ol style="list-style-type: none"> 1. Have all the results framework/logframe indicators been updated to end of June this year? Is sufficient evidence available to confirm the data provided? Has this evidence been uploaded to the PIR? If indicators could not be reported on please explain why in the DO rating comments section. 2. Do the indicators adequately measure cumulative progress toward the project objective and outcomes? If not then please explain the mitigating circumstances in the DO rating comments. 3. Consider the likelihood that the project will achieve its stated objective and outcomes and end-of-project targets by the planned project closure date. 4. Consider whether sufficient measures will be in place by project closure to facilitate the long-term sustainability of results (e.g. exit strategy, new partnerships, indirect GEBs generated in the ten years after closure, additional co-financing, etc.). <p>Please justify your rating and address the following points in your comments. Please keep word count between 500 words minimum and 1200 words maximum.</p> <ol style="list-style-type: none"> 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. <p>Moderately Satisfactory (MS)</p> <p>The DO rating is Moderately Satisfactory because at this stage the project has achieved 12 out of total 19 outcome indicators. The activities are on-going to achieve the remaining targets. The targets regarding the on-grid solar farm project (capacity 500 kW) and two off-grid hydropower plants (Outcome 2) will not be made possible due to external and uncontrollable factors. The Project Board on 24 May 2016 then suggested to modify the outputs and to extend the period of the project from 31 December 2016 to 31 December 2017 to complete the modified activities: installation of solar systems for 2 off-grid schools; and maintenance of 91 units of SHSs by 2016 and additional installation of RETs and others in 2017. Considering the remaining budget and activities, extending the project closure to one additional year will enable the project to facilitate the long-term sustainability of results. The project extension request is in process to ensure the remaining activities including the modified ones are fully completed and all outcomes are achieved.</p> <p>The key positive trend in this reporting period include:</p>

	<p>All results in Outcome 1 (strengthened institutional, organizational and social capacity results in planning, management and implementation of integrated RE programmes in MHS) have been achieved (100 percent) and in line with provincial development strategy. The capacity of local institutions in planning, management and implementation of renewable energy is strengthened with participation of local stakeholders.</p> <p>Most of the planned technical supports in Outcome 3 have been accomplished and will be all completed within 2016, although the project needs to ensure engagements/ ownerships of the local stakeholders and quality results.</p> <p>The activities for Outcome 4 have been on track and will be completed by the end of 2016.</p> <p>The risks can be identified in terms of the lack of policy support and the incoherence of policies between government agencies at provincial and central level. The project will look into obtaining technical support and partnering with the military base in Mae Hong Son. A concern has been raised over whether the modified activities will reach the targets.</p> <p>In order to take actions to eliminate the risks, the project will consider the following actions:</p> <ol style="list-style-type: none"> 1. The project will develop a TOR and recruit a national technical consultant to provide recommendations and strategies in terms of renewable energy and technologies. 2. The project will consult with stakeholders whether it could increase the capacity of solar rooftop already installed at the Provincial Hospital and at health posts (if applicable), whether more solar panels can be used to increase the generation capacity. This will respond to at least two of the Sustainable Development Goals (SDGs) under Goal 3 – Good Health and Goal 7 – Renewable Energy. 3. The project will identify more demonstration sites for solar roof tops.
<p>GEF Operational Focal point is the government representative in the country designed as the GEF operation focal point.</p>	<p>HIGHLY RECOMMENDED but NOT mandatory for projects under implementation in one country. Not necessary for regional or global projects.</p> <p>Please review the cumulative progress toward end-of-project targets as noted in the DO tab of this PIR and provide a rating on this progress. Please consider the following questions before selecting a DO rating:</p> <ol style="list-style-type: none"> 1. Have all the results framework/logframe indicators been updated to end of June this year? Is sufficient evidence available to confirm the data provided? Has this evidence been uploaded to the PIR? If indicators could not be reported on please explain why in the DO rating comments section. 2. Do the indicators adequately measure cumulative progress toward the project objective and outcomes? If not then please explain the mitigating circumstances in the DO rating comments. 3. Consider the likelihood that the project will achieve its stated objective and outcomes and end-of-project targets by the planned project closure date. 4. Consider whether sufficient measures will be in place by project closure to facilitate the long-term sustainability of results (e.g. exit strategy, new partnerships, indirect GEBs generated in the ten years after closure, additional co-financing, etc.).

	<p>Please justify your rating and address the following points in your comments. Please keep word count between 200 words minimum and 500 words maximum.</p> <ol style="list-style-type: none"> 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. <p>[DO rating in 2016]</p> <p>[comments]</p>
<p>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).</p>	<p>RECOMMENDED but NOT MANDATORY for projects under implementation in one country and regional projects.</p> <p>Please review the cumulative progress toward end-of-project targets as noted in the DO tab of this PIR and provide a rating on this progress. Please consider the following questions before selecting a DO rating:</p> <ol style="list-style-type: none"> 1. Have all the results framework/logframe indicators been updated to end of June this year? Is sufficient evidence available to confirm the data provided? Has this evidence been uploaded to the PIR? If indicators could not be reported on please explain why in the DO rating comments section. 2. Do the indicators adequately measure cumulative progress toward the project objective and outcomes? If not then please explain the mitigating circumstances in the DO rating comments. 3. Consider the likelihood that the project will achieve its stated objective and outcomes and end-of-project targets by the planned project closure date. 4. Consider whether sufficient measures will be in place by project closure to facilitate the long-term sustainability of results (e.g. exit strategy, new partnerships, indirect GEBs generated in the ten years after closure, additional co-financing, etc.). <p>Please justify your rating and address the following points in your comments. Please keep word count between 200 words minimum and 500 words maximum.</p> <ol style="list-style-type: none"> 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. <p>[DO rating in 2016]</p> <p>[comments]</p>
<p>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).</p>	<p>RECOMMENDED but NOT MANDATORY for jointly implemented projects.</p> <p>Please review the cumulative progress toward end-of-project targets as noted in the DO tab of this PIR and provide a rating on this progress. Please consider the following questions before selecting a DO rating:</p> <ol style="list-style-type: none"> 1. Have all the results framework/logframe indicators been updated to end of June this year? Is sufficient evidence available to confirm the data provided? Has this evidence been uploaded to the PIR? If indicators could not be reported on please explain why in the DO rating comments section. 2. Do the indicators adequately measure cumulative progress toward the project objective and outcomes? If not then please explain the mitigating circumstances in the DO rating comments. 3. Consider the likelihood that the project will achieve its stated objective and outcomes and end-of-project targets by the planned project closure date. 4. Consider whether sufficient measures will be in place by project closure to facilitate the long-term sustainability of results (e.g. exit strategy, new partnerships, indirect GEBs generated in the ten years after closure, additional co-financing, etc.).

	<p>Please justify your rating and address the following points in your comments. Please keep word count between 200 words minimum and 500 words maximum.</p> <ol style="list-style-type: none"> 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. <p>[DO rating in 2016]</p> <p>[comments]</p>
<p>UNDP Technical Adviser is the UNDP-GEF Technical Adviser.</p>	<p>MANDATORY RATING MUST BE PROVIDED for all projects.</p> <p>Please review the cumulative progress toward end-of-project targets as noted in the DO tab of this PIR and provide a rating on this progress. Please consider the following questions before selecting a DO rating:</p> <ol style="list-style-type: none"> 1. Have all the results framework/logframe indicators been updated to end of June this year? Is sufficient evidence available to confirm the data provided? Has this evidence been uploaded to the PIR? If indicators could not be reported on please explain why in the DO rating comments section. 2. Do the indicators adequately measure cumulative progress toward the project objective and outcomes? If not then please explain the mitigating circumstances in the DO rating comments. 3. Consider the likelihood that the project will achieve its stated objective and outcomes and end-of-project targets by the planned project closure date. 4. Consider whether sufficient measures will be in place by project closure to facilitate the long-term sustainability of results (e.g. exit strategy, new partnerships, indirect GEBs generated in the ten years after closure, additional co-financing, etc.). <p>Please justify your rating and address the following points in your comments. Please keep word count between 500 words minimum and 1200 words maximum.</p> <ol style="list-style-type: none"> 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. <p>Moderately Unsatisfactory (MU)</p> <p>This reporting period the project has started making slow but gradual progress towards its development objectives. 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.</p> <p>It is expected that the project will achieve only some of its major stated global environmental objective albeit with major shortcomings. Examined outcome by component by component, the project results towards the development objective can be assessed as follows: Overall, this reporting period has been relatively promising after years of bleak delivery of outputs and activities to achieve the four project outcomes. At the Objective level, the RE power generation capacity in MHS is still at 29,220 MW (on-grid) but has progressed to 1,270 KW (off-grid) compared to EOP target of 29,220 MW (on grid) and 255 kW (off-grid). Alongside with this, the project developed 4 new RE models (vs. 3 new models targeted) with 3 additional new models which are being developed.</p> <p>There have been positive trends particularly in Outcomes 1,3 and 4. Under Outcome 1 a total of 15 RE projects (1 SHS + 14 bio-digesters) have been developed</p>

and proposed by local agencies relevant with provincial development strategy, thus manifesting their enhanced interest, understanding and capacity in developing RE projects. The PMU has successfully piloted 3 management models on RET applications are being piloted in public buildings and educational institutions across participating TAOs and villages. In the remaining time, before EOP, it should analyze the models and clearly understand the barriers and opportunities to ascertain that these management models are refined into concrete, business models with long term sustainability. The project should also ensure that the models inform and are embedded in the provincial off grid electrification plan.

Marginal progress has been recorded this year under Outcome 2. The project witnessed set back in realizing two renewable energy systems (microhydro plants, MHP and Solar Farm) due to conflicting strategic priorities between the local and national government after the military coup two years ago but still very much pronounced. For instance, this reporting cycle the project had prepared and submitted applications on two separate micro-hydro plants (approx. 20 kW) to the Department of National Parks, Wildlife and Plant Conservation (DNP). Despite existing regulatory frameworks permitting such projects in the area, DNP rejected the applications on the grounds that the proposed sites were located in conservation areas where development activities are prohibited. The project had envisioned challenges in securing the permits right from the project formulation stage which is why the PMU has been working extremely closely with the local government agencies and stakeholders throughout the MHP project conception process to site survey and selection adhering to DNP regulations. This was reinforced with policy advocacy dialogues with DNP officials at local, regional and central levels, to persuade on the importance of operating renewable energy solutions in MHS in order to realize the dual objective of providing clean and affordable energy as well as protecting the forest through avoided fuel woods. Similarly, the project had prepared a 500kW on-grid solar farm proposal. The award of permit was based on a lucky draw process rather than meticulous scrutiny of its technical and business viability. Unfortunately, the proposed solar farm did not win the lucky draw. Recognizing significant constraints for grid connected generation in conservation areas, the project has now shifted its strategy to actively include off grid and non-electrical RE technologies in assisting MHS to become energy self-sufficient. Therefore, now the project is preparing a proposal for two off grid systems in hospitals and educational institutions. This has also been one of the core recommendations of last year's PIR and MTR.

The high points under this outcome have been the installation, operation and / or rehabilitation of 103 SHS units (Vs. 100 targeted); 207 lanterns (vs. 200 units targeted); additional 31 bio-digesters (vs. 20 targeted); one 2.5 kw solar rooftop (vs. 10 X 200 w or 2 kw targeted); 14 villages of 3 ethnic groups (vs. 10 villages targeted); while there was no EE project in government building yet approved. The project has successfully completed majority of activities and outputs under outcome 3 with several of the indicators surpassing the original EOP targets. For instance, 10 village/TAO technicians have been trained on SHS rehabilitation, over 1200 villagers across 27 villages have been trained on maintenance and rehabilitation of SHS; 155 biodigester users have been trained on operation and

maintenance of the systems, to name a few. Recently, the Project Board has recommended introduction of training programme to 100 local technicians & vocational/college students and 200 villagers on operation, maintenance and rehabilitation of solar systems. .

Likewise, the project has successfully captured the lessons and experiences from the ongoing and completed activities in Outcomes 1-3 in the form of publications and disseminated to share the results and lessons from RE technology application. Two lessons learned on MHP policy and regulations were developed and presented. Similarly it has secured approval for center of learning. Several guidelines have been published and disseminated on SHS, bio-digesters, and solar roof top. However, with demo projects in Outcome 2 still not in full swing, it is a little too early for the project to rush in to compiling lessons and disseminate the results. There seem to be a disconnect between the activities pursued in this outcome vis-a-vis concrete results accomplished under other outcomes.

In order to enhance the sustainability of the installed RETs, the project continued training the technicians, users, local government staff and other stakeholders; included renewable energy in the energy planning of local governments and included renewable energy in the curriculum of local technical colleges. Having done these, the sustainability of the project is still not certain. The biodigesters, ICS and SHS may not work as expected or after the project is ended. However, there are no mechanisms in place to ensure that the trainees of all the programs remain in maintaining these systems.

The project has identified 2 critical risks: lack of policy support in implementing REs at the local level and the limited capacity of provincial partners to fully support the project.

On the overall, the DO rating is Moderately Unsatisfactory. The activities are ongoing to achieve the remaining targets but it is unlikely that the project will achieve most of its objective and outcomes and end-of-project targets by the planned project closure date considering the fact that project management has requested for extension.

The project appears to be moving in the right direction after a long hiatus. However, with less than a year to go before the project closure (extension anticipated), it needs to speed up implementation of outputs that are still facing a lull. For the project to achieve its stated global environment benefits, the successful realization and implementation of the RET systems including the monitoring and reporting of the associated GHG emission reductions; and, establishment of concrete RE management and service delivery models are key elements which need to take place as the first order of business.

General comments on Development Objective Rating

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DO Progress: Rating Definitions	
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.
Moderately 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.
Moderately 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: evidence to support annual Implementation Progress Rating

Please complete all sections of this tab. The IP Ratings on the next tab of this PIR should be informed by the inputs in the Adjustments tab. The responses should also be used by the UNDP Country Office to complete the UNDP annual project quality assurance assessment during implementation; the questions under “Annual Project Quality Assurance Assessment” have been aligned with that system. If you have any general comments about the information in this section of the PIR, please note them at the bottom of this page. Please upload the following documents as relevant on the approve/submit tab: project board meeting minutes; stakeholder consultation documents; lessons learned and other knowledge management materials.

Annual Project Quality Assurance Assessment

Project Governance	
Are at least 40 percent of the personnel hired by the project, regardless of contract type, female?	Yes, 90% female
Dates of Project Steering Committee/Board meetings during reporting period (30 June 2015 to 1 July 2016)	18 Nov 2015 24 May 2016
Did the Project Board function as intended this reporting period?	Yes
Please add any comments on project governance.	The Project Board has provided strong support and strategic directions to the project.
Annual Work Planning	
Have project inputs been procured and delivered on time and budget this reporting period?	No, there are delays due to the fact two renewable energy systems (solar farm and MHP) could not be installed. Currently awaiting for approval by UNDP-GEF of proposed modifications.
Will the project be able to close on time as planned?	No, due to above mentioned delays.
Please add any comments on annual work planning	Since 2 major RETs could not be installed due to external factors, the next annual work plan (2016-2017) has to be revised after getting endorsement by UNDP.
Stakeholder engagement and target groups	
Please discuss how stakeholders and target groups were directly engaged in the decision-making, implementation and monitoring of the project this reporting period.	For decision-making or project direction, all provincial stakeholders were engaged in the Project Board meetings; while key focal points engaged in all aspects of project implementation in term of consultations through face-to-face meetings, telephones or other digital means, co-financing and working partners. Target groups joined during public hearing/ community consultations & participation during the implementation. Key focal points monitored the project activities & met beneficiaries and report to the Project Board.
Monitoring & Evaluation (M&E)	
Please discuss how the project M&E Plan was implemented and used to support effective project management this reporting period (e.g. please consider whether progress data against the indicators in the project results framework was reported using credible data sources and collected according to the M&E plan, including sex disaggregated data as relevant; whether lesson learned were used to take corrective actions as necessary; whether evaluations were conducted following	The project has monitoring plan for key government focal points and UNDP CO. Chief of MHS Provincial Office and his staff from Strategic Planning Unit carried-out monitoring visits that aimed to measure implementation procedures, quality results and impacts that fulfill the needs of local people and MHS government. They reported with recommendations to

<p>the UNDP-GEF guidance available at www.undp.erc.org; and other issues as relevant).</p>	<p>the Project Board. UNDP CO senior staff scheduled the visits to the project sites. Advices were made on effective implementation & gender approach to transfer of RE technologies.</p>
<p><i>Social & Environmental Standards</i></p>	
<p>Were any new social and environmental impacts and risks identified this reporting period?</p>	<p>No</p>
<p>Please discuss how social and environmental impacts and risks were managed this reporting period, as relevant.</p>	<p>(no more than 200 words)</p>

Project Planning

If delays have occurred in reaching key projects milestones - the inception workshop, the Mid-term Review and/or the Terminal Evaluation - then note below the current status of that milestone, the original planned and actual/expected dates, and comments to explain the reasons for the delays and their implications.

Key Project Milestone	Status (pick one option below)	Original Planned Date	Actual/Expected Date	Comments including reasons for delays and their implications
Inception Workshop	<i>Delayed/Completed</i>	<i>December 2010</i>	<i>January 2011</i>	<i>The project was endorsed by the GEF CEO in February 2010, whereas the project document was only signed with the government host agency in December 2010 (10 months delay).</i>
Mid-term Review	<i>Delayed/Completed</i>	<i>June 2013</i>	<i>August 2013</i>	<i>Completed. The Request for Proposals for the mid-term review was advertised at the end of May 2013, the consulting firm was selected in June 2013, and the field mission to Thailand was conducted from 23-30 July 2013. The final version of the MTR was released 30 August 2013. This delay did not have any significant consequences on project implementation.</i> <i>However, the implementation of the recommendations of the MTR took longer than anticipated, mainly due to the political situation in Thailand, see comments under "General Comments on Basic Data".</i>
Terminal Evaluation	<i>Delayed/Pending</i>	<i>December 2015</i>	<i>December 2017</i>	<i>As per the new timeframe for the proposed one-year no-cost extension period, the TE proposed to take place at end of 2017. Originally it was planned at the end of 2015 then shifted to the end of 2016.</i>
Project Closure	<i>Delayed/Pending</i>	<i>December 2015</i>	<i>December 2017</i>	<i>As per recent modification of outputs, proposed for project closure will be at the end of 2017.</i>

Critical Risk Management

Select from below the critical risks only that appear in the ATLAS project risk log and briefly describe actions undertaken this reporting period to address each critical risk. Please ensure that any 'social' risks identified during the environmental and social screening of the project are reflected in the ATLAS risk log under type/description 'other'. Note that the total number of critical risks is used to calculate the overall risk rating of the project. The methodology to determine the overall risk rating is explained further on this page.

Current/Active Critical Risks (pick one option below; add rows as necessary)	Critical Risk Management Measures Undertaken in 2016
Policy	<p>Government policies during this military junta government can be changed quickly and probably without proper analyses or accountable to people due to its sovereignty. Within this uncertain situation, the project has great difficulties implementing the planned activities to get expected deliverables under limited timeframe. When coping with the unexpected, the project needed more time for close consultations with stakeholders, arrangements or adjustments of activities. Government stakeholders also have difficulties running their offices; therefore have less time to support.</p> <p><u>Solar PV Rooftop</u></p> <ul style="list-style-type: none"> • During Q3/2015-Q1/2016, the government's decision to decrease incentives of electricity sale per unit of solar rooftop at individual building; and uncertainty on issuance of the use of solar rooftop for energy saving purpose (end of selling) caused the project more attempts to get potential household clients interested to install the systems. => Try to proceed under uncertainty of policy change. • Finally on 11 Mar. 2016, the National Energy Policy Council endorsed the policy that allow the Provincial Electricity Authority stop buying electricity generated from individual solar rooftop system causing the project to stop targeting at individual household. => Change target form house to SME/ hotel owners and still carry out awareness building activity with expectation to get SME clients. <p><u>Grid-linked Solar PV Farm</u></p> <p>The solar farm operations needed an approval from the Energy Regulatory Commission (ERC). Qualified investors were required to submit the feasibility study report, construction plan, operation and financial models to the ERC for its consideration. However, due to limited quota and with overwhelming requests from solar farm developers; the ERC decided to grant the permit to qualified operators by lucky lots draw. The draw event was postponed 3 times during December 2015 to March 2016. Finally, on 21 April 2016, the proposed solar farm project in MHS got unlucky draw; therefore could not proceed. => The PB proposed to modify this activity to the installation of off-grid solar PV system at 2 remote schools, with TA/trainings on solar systems and maintenance to 10 local technicians.</p>
Regulatory	<p>MHS needs special regulatory support for the RE service provision since 90% of the total area is categorized as forest area and enforced by either the Forest or the National Parks Act. According to the laws, there is a room for negotiation if the project proposal (i) can prove to benefit to environment and (ii) with officials from the Department of National Parks, Wildlife and Plant (DNP) act as the project submitter. However, in case of the MHP, flexibility allowed by laws could not be applied during this time as Heads of government staff did not want to take any risk. This is because there have been many immediate transfer cases, without proper investigation, to ministerial permanent-</p>

	<p>secretaries and departmental director-generals by Article 44, the special absolute power allowed to the junta prime minister. This situation narrowed down UNDP’s attempts to negotiate with DNP for permit issuance to the 2 project’s integrated MHP-Environment proposals as well as the offer to UNDP-DNP technical cooperation on integrated RE-Environment submitted to DNP right after the first MHP permit request was rejected.</p> <p>The Project Addendum reviewed barriers to MHP operational and suggested that: <i>“The intervention of the underlying GEF project concerning hydropower will therefore need to be very specific and focused, aimed at overcoming the legal barrier for realization of community based off-grid micro- and mini- hydropower plants.” [Addendum: para. 100, page 31]</i></p> <p>From the project’s experience pursuing for the permit, it showed that, even with <i>‘specific and focused’</i> by proposing to DNP to use MHP installation sites as nodal points for community-based environmental protection activities, with DNP local offices and local governments were co-submitters, and throughout long period (1.5 years) of policy dialogues between UNDP CO and DNP administrators, the legal barrier for the realization of the off-grid MHP cannot be overcome. => The PB proposed to modify this activity to rehabilitation of SHSs, TA/trainings on solar systems and SHSs rehabilitation and maintenance to 200 villagers and 100 local technicians & community college students.</p>
Operational	<p>Inadequate capacities of ethnic communities to access affordable and reliable RE systems => Entrepreneurial support such as barter trade to RE devices (see page 25), sale tactics to women entrepreneurs (see page 24), or transport of RE devices.</p>

General comments on Adjustments

No adjustments to the timeframe of the project were made in this reporting period.
 An extension is being proposed till end of 2017. Extension request is pending approval.

Implementation Progress Rating

<p>Project Manager / Coordinator is the person managing the day to day operations of the project.</p>	<p>MANDATORY RATING MUST BE PROVIDED for projects under implementation in one country or regional projects where appropriate.</p> <ol style="list-style-type: none"> 1. Please rate the efficiency in delivery of outputs. For example, in this reporting period, is project delivery on target with the Annual Work Plan? Is cumulative project delivery on track? 2. Please rate the quality of project governance and project management. For example, in this reporting period did the Project Board address critical issues? Did the project manager effectively implement the decisions of the Project Board? 3. Please rate the quality of risk management. For example, in this reporting period were project risks, including any social and environmental safeguard risks, managed effectively,? 4. Please rate the quality of adaptive management. For example, in this reporting period were actions taken to address implementation issues identified in the 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? <p>Please justify your rating and address the following points in your comments. Please keep word count between 500 words minimum and 1200 words maximum.</p> <ol style="list-style-type: none"> 1. Explain why you gave a specific rating. 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.
	<p>Moderately Satisfactory (MS)</p> <p>In general: implementation of some components is in substantial compliance with the original/formally revised work plan with some components requiring remedial action.</p> <ol style="list-style-type: none"> 1. <u>Progress in Delivery of Outputs:</u> [MS] The rating was moderately satisfactorily because the project could produce some tangible and intangible results: it completed several project activities and most project outputs are progressing well as per the approved workplan. The implementation was in most cases in compliance with the work plan. However, implementation of the solar farm and MHP projects had to come to an end due to factors beyond the project control. <p>For the second year of the Phase 2 in MHS, the project successfully created a better image for the UNDP/GEF project as professional and reliable development partners. The image of the project during phase 1 was not good. All management structures and coordination mechanisms horizontally and vertically, including communication channels, with MHS project stakeholders, especially with key provincial focal points: MHS Provincial Office (PO) and Provincial Energy Office (PEO) were well established with very good relationships and mutual respects.</p> <p>In general, almost all project activities were carried-out according to the work plan. Activities under Outcome 1 were completed while few remaining activities under Outcome 3, which are also gearing toward achievement.</p> <p>Main delays were in implementation of MHP and solar farm. Regarding MHP, there was a long delay in the processing of the permit request. It took DNP 1.5 years before rejecting the requests. During Q1 - Q2/2016, DNP slowly informed the project, through its line administration, of the declined to the 2 project's proposed MHP locations.</p>

Affected by government policy changes were also the implementation of solar rooftop systems and the solar farm. The solar farm did not get a permit to deliver to the grid. This became apparent in Q1 2016. The project had to identify alternatives. For solar rooftop systems, one system was installed on the hospital. Other revised activities were proposed by the Project Board, see DO section. Currently awaiting approval by UNDP-GEF.

The main achievements of the project implementation during the reporting period (July 2015 to June 2016) were, as per the workplan:

Outcome 1: Strengthened institutional, organizational and social capacity results in planning, management and implementation of integrated RE programmes in MHS

- Completion of all activities

Outcome 2: Financially sustainable RE systems operational in MHS

- Completion of all activities of ICS, biodigesters and SHS/ solar lantern;
- Completion with community public hearings, business negotiation with local institutions & communities and a solar farm investor (ThaiOil Group);
- Completion of pre-feasibility study, management, business, operation, financial, profit sharing models of solar farm;
- Completion of installation & operation of solar rooftop at government building (provincial hospital) with implementation of energy efficiency (EE) measures (supported to additional generation capacity from 500 W to 2.5 kW by SPCG Public Company Limited).

Outcome 3: Technical support is available locally for the development, management and maintenance of RE applications in MHS

- Completion of all planned trainings except one recently proposed modification. Pending approval by UNDP-GEF.

Outcome 4: Policies facilitate up-scaling and replication of RE systems in Thailand

- Completion of 2 lessons learned on ICS and MHP & presentation to sub-national partners
- Completion of RE learning center management plan

Since MHP and solar farm activities could not implement further, deliverables of modified RE alternatives would start after approval by UNDP-GEF, in Q3 or Q4/2016.

2. Efficiency in Delivery of Outputs [MS]

The cumulative project financial delivery as of 30 June 2016 is US\$ 298,658. The financial delivery is less than expected as the solar farm and MHP could not be realized. Awaiting approval from UNDP-GEF for revised activities.

3. Project governance and project Management [MS]

Project governance and project management was rated marginally satisfactory. The project team and project manager did address all risks emerging during implementation as much as they could. They kept the Project Board and UNDP regularly informed and liaised on risk mitigation measures. Implementation strategies agreed were effectively implemented by the project team and project manager. All project quarterly progress reports were submitted on time and were of good quality.

4. Quality of Risk Management [HS]

The risks which the project encountered and mitigated were:

- *Inadequate Local and Community Capacities*

Local governments (TAOs) have limited capacity and resources to fully support the project activities due to (i) few or no personnel who has knowledge/skills in relation to RE technologies; (ii) TAOs have limited or no budget for RE services; (iii) there are always internal conflicts between elected bodies and TAO civil servants. => The project provided TA to TAO personnel. Requested to TAOs for win-win supports of all sides. Created local RE development network to support one another.

- *Inaccessible and Unaffordable to Reliable RETs*

Project's target communities consist of several indigenous groups such as Tai Yai, Karen and Lahu. Almost of them live scattered on mountains with totally different cultures, dialects, beliefs and ways of life as well as perspectives to the use of RETs. Almost all of them live under Thailand's poverty line of THB 68/person/day or USD 2/person/day and have low or no education. Under these circumstances, it was quite challenging for the project team to introduce 'high-value' RE devices. For example, the price of an imported solar lantern/unit is THB 2,300 compared to individual average annual income of THB 5,000 – 15,000. This means the project promoted RE device is too expensive for the end-users who need it most.. => The project coordinated to UNDP Procurement to get 30% tax exemption from Ministry of Foreign Affairs for importing solar lanterns. But the request was declined. => Then, the project negotiated with the target groups for barter trade: an exchange between solar lanterns with Karen clothes.

ICS was an example of reliable but inaccessible, semi-affordable RET. The price of the promoted ICS is THB 250, but it was available only in Chiang Mai, a nearby province (around 350 km. from MHS). Transport cost are high due to heavy weight of stoves carried along long-distance winding roads. => The project support transport of ICS from Chiang Mai to 4 sales outlets, each owned by women. Additional support to these women entrepreneurs on ICS information leaflets and sales strategies to allow pay-off by 2-3 installments.

5. Quality of Adaptive Management [S]

- *Solar PV Rooftop*

Government's decision on abolishing incentives for solar rooftop and decision of Provincial Electricity Authority to stop buying of electricity from individual solar rooftop. => Persisted with the uncertainty of government policy during Q3/2015-Q1/2016. => Change target form house to SME/ hotel owners with a larger need for electricity and carry out awareness building activity.

- *Grid-linked Solar PV Farm*

Permit not obtained from unlucky lots draw => Seek direction from the PB => Modify the activity to one that can be implemented in MHS. See DO section. Awaiting approval from UNDP-GEF.

- *Off-grid MHP*

Permit not obtained from DNP. => Seek direction from the PB. => Modify the activity to one that can be implemented in MHS. See DO section. Awaiting approval from UNDP-GEF.

	<p>6. <u>Quality of Monitoring and Evaluation</u> [HS]</p> <ul style="list-style-type: none"> • UNDP CO conducted 2 monitoring visits to the project in order to have close consultations with key provincial stakeholders and the project team. Advices and adjustments were provided for smooth operation on the ground. Feedbacks from the visits were satisfactorily. The CO team understood better about complex situations that PMU was facing and agreed with its adaptive management carried-out. • Chief of MHS Provincial Office carried out monitoring mission to the project sites. Feedbacks from the visit was highly satisfactorily.
<p>UNDP Country Office Programme Officer is the UNDP programme officer in the UNDP country office who provides oversight and supervision support to the project.</p>	<p>MANDATORY RATING MUST BE PROVIDED for projects under implementation in one country. Not necessary for regional or global projects.</p> <ol style="list-style-type: none"> 1. Please rate the efficiency in delivery of outputs. For example, in this reporting period, is project delivery on target with the Annual Work Plan? Is cumulative project delivery on track? 2. Please rate the quality of project governance and project management. For example, in this reporting period did the Project Board address critical issues? Did the project manager effectively implement the decisions of the Project Board? 3. Please rate the quality of risk management. For example, in this reporting period were project risks, including any social and environmental safeguard risks, managed effectively,? 4. Please rate the quality of adaptive management. For example, in this reporting period were actions taken to address implementation issues identified in the 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? <p>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.</p> <ol style="list-style-type: none"> 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. <p>Moderately Satisfactory (MS)</p> <p>The part is rated moderately satisfactory because the project implementation has been progressed as planned except the two planned outputs due to the external and uncontrollable factors.</p> <p>In consultation with the project board member and UNDP Thailand management, it was proposed and agreed that modified outputs should be in place to substitute the solar farm and the micro hydro power. However, it is foreseeable that the modified outputs will not be completed by the end of 2016 which is the end of the project period. In order to implement the modified outputs, the project will need to be extended to 31 December 2017 with no additional costs.</p> <p>The main achievements of the project implementation during the reporting period (July 2015 to June 2016) were:</p>

	<ul style="list-style-type: none"> ▪ The timely completion of Outcome 1: Strengthened institutional, organizational and social capacity results in planning, management and implementation of integrated RE programmes in MHS ▪ The completion of Outcome 2: Financially sustainable RE systems operational in MHS in terms of cook stoves, biodigesters and SHS/ solar lantern; community public hearings, business negotiation with local institutions & communities and a solar farm investor; pre-feasibility study, management, business, operation, financial, profit sharing models of solar farm; and installation & operation of solar rooftop at government building (provincial hospital) with implementation of energy efficiency (EE) measures, supporting additional generation capacity from 500 W to 2.5 kW. ▪ The completion of Outcome 3: Technical support is available locally for the development, management and maintenance of RE applications in MHS, pending the recently modified activities. ▪ The completion of 2 lessons learned on ICS and MHP & presentation to sub-national partners and RE learning center management plan under Outcome 4: Policies facilitate up-scaling and replication of RE systems in Thailand <p>From the field visit monitoring visit and observation in May 2016, the project fully succeeded in installing sustainable RE systems in the target communities such as biodigesters and SHS/ solar lanterns (100 percent). However, the project noticed that there is a gender gap in utilizing the systems. Cook stoves are used by men and women alike. However, for more complicated RE systems such as biodigesters and SHS/ solar lantern, men tend to be the ones to operate them. Some women find these systems beyond their capabilities and tend to leave them to men to operate. For the next PIR and the extension period, the project plans to ensure the use of the RE systems by developing comprehensive manuals that are women-friendly and training for women to maximize the usage of the RE systems.</p> <p>If the project extension request does not get approved, the project will start project closure process immediately by focusing on the remaining activities.</p>
<p>GEF Operational Focal point is the government representative in the country designed as the GEF operation focal point.</p>	<p>HIGHLY RECOMMENDED but NOT mandatory for projects under implementation in one country. Not necessary for regional or global projects.</p> <ol style="list-style-type: none"> 1. Please rate the efficiency in delivery of outputs. For example, in this reporting period, is project delivery on target with the Annual Work Plan? Is cumulative project delivery on track? 2. Please rate the quality of project governance and project management. For example, in this reporting period did the Project Board address critical issues? Did the project manager effectively implement the decisions of the Project Board? 3. Please rate the quality of risk management. For example, in this reporting period were project risks, including any social and environmental safeguard risks, managed effectively,? 4. Please rate the quality of adaptive management. For example, in this reporting period were actions taken to address implementation issues identified in the 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? <p>Please justify your rating and address the following points in your comments. Please keep word count between 200 words minimum and 500 words maximum.</p> <ol style="list-style-type: none"> 1. Explain why you gave a specific rating. 2. Note trends, both positive and negative. 3. Provide recommendations for next steps. <p>[IP rating in 2016]</p>

	[comments]
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).	<p>RECOMMENDED but NOT mandatory for projects under implementation in one country or regional projects.</p> <ol style="list-style-type: none"> 1. Please rate the efficiency in delivery of outputs. For example, in this reporting period, is project delivery on target with the Annual Work Plan? Is cumulative project delivery on track? 2. Please rate the quality of project governance and project management. For example, in this reporting period did the Project Board address critical issues? Did the project manager effectively implement the decisions of the Project Board? 3. Please rate the quality of risk management. For example, in this reporting period were project risks, including any social and environmental safeguard risks, managed effectively,? 4. Please rate the quality of adaptive management. For example, in this reporting period were actions taken to address implementation issues identified in the 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? <p>Please justify your rating and address the following points in your comments. Please keep word count between 200 words minimum and 500 words maximum.</p> <ol style="list-style-type: none"> 1. Explain why you gave a specific rating. 2. Note trends, both positive and negative. 3. Provide recommendations for next steps.
	[IP rating in 2016]
	[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).	<p>RECOMMENDED but NOT mandatory for jointly implemented projects.</p> <ol style="list-style-type: none"> 1. Please rate the efficiency in delivery of outputs. For example, in this reporting period, is project delivery on target with the Annual Work Plan? Is cumulative project delivery on track? 2. Please rate the quality of project governance and project management. For example, in this reporting period did the Project Board address critical issues? Did the project manager effectively implement the decisions of the Project Board? 3. Please rate the quality of risk management. For example, in this reporting period were project risks, including any social and environmental safeguard risks, managed effectively,? 4. Please rate the quality of adaptive management. For example, in this reporting period were actions taken to address implementation issues identified in the 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? <p>Please justify your rating and address the following points in your comments. Please keep word count between 200 words minimum and 500 words maximum.</p> <ol style="list-style-type: none"> 1. Explain why you gave a specific rating. 2. Note trends, both positive and negative. 3. Provide recommendations for next steps.
	[IP rating in 2016]
	[comments]
UNDP Technical Adviser is the UNDP-GEF Technical Adviser.	<p>MANDATORY RATING MUST BE PROVIDED for ALL projects.</p> <ol style="list-style-type: none"> 1. Please rate the efficiency in delivery of outputs. For example, in this reporting period, is project delivery on target with the Annual Work Plan? Is cumulative project delivery on track? 2. Please rate the quality of project governance and project management. For example, in this reporting period did the Project Board address critical issues? Did the project manager effectively implement the decisions of the Project Board? 3. Please rate the quality of risk management. For example, in this reporting period were project risks, including any social and environmental safeguard risks, managed effectively,?

4. Please rate the quality of adaptive management. For example, in this reporting period were actions taken to address implementation issues identified in the 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?

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.

Moderately Satisfactory (MS)

The project has witnessed a year of implementation progress in comparison to the previous years of setbacks. Despite ongoing regulatory and institution challenges, the project has been able to implement key recommendations from the midterm review as well as those provided by UNDP CO and RTA in 2015 PIR. Some of these concrete actions include refining the outputs and outcomes of the project in line with the recommendations. The project has acknowledged that much of the material and practical opportunities lie in the off-grid and general RET market. The constraints to grid-connected generation in conservation area such as MHS do not really apply for most part to the off-grid market. Therefore, the project has expanded its scope beyond grid and proactively pursuing off grid and non-electrical RET solutions while still maintaining a focus on barrier removal activities for on-grid options. In doing so it has accomplished an installed capacity of 1,270 kW surpassing the original target of 255kW through a combination of technologies spanning across ICS, SHS, solar lanterns, bio-digesters, solar rooftops to name a few. The project delivery is on target with the AWP and overall the project turn in most of the expected deliveries for this reporting period. As underlined in the DO tab, even though the project will not be able to achieve the on-grid target by EOP - owing in part to factors outside its influence - surpassing the off-grid target is a significant accomplishment for a project bogged down with incessant challenges from the word go. Outcome 2 needs to be brought back to track and a more methodical implementation action is required. Despite this, the project still qualifies for a Moderately Satisfactory rating on the efficiency of delivery of outputs, considering the abovementioned achievements.

On project governance and project management, the PMU has prepared an implementation strategy taking on board several recommendations from the MTR and the achievements this reporting period are a testament that the implementation strategy has been closely adhered to by the PMU. The PMU has made tremendous effort to push the delivery of the slow moving outcomes and effectively implementing the decisions of the Project Board, e.g. the recommendations to expand the training programmes to local technicians & vocational/college students on operation, maintenance and rehabilitation of RETs. The PB has been assisting the project with regards to policy advocacy particularly in securing the permits for solar farm and MHP. Overall all project quarterly progress reports have been meticulously

prepared and submitted on time and project updates well documented. Therefore, Quality of project governance: Moderately Satisfactory (MS).

Similarly, the PMU has been able to identify the risks encountered during implementation. They kept the Project Board and UNDP regularly informed and liaised on risk mitigation measures. However, the risks need to be constantly managed particularly on ensuring the availability of human resources to operated and maintain the RE systems. Therefore, quality of risk management has been rated as Moderately Satisfactory.

On adaptive management, the project team managed to adjust the direction and nature of activities to produce the required outputs in consultation with the Project Board. There were unexpected factors that were encountered that affected the course of implementation such as the government's decision on abolishing incentives for solar rooftop and decision of the Provincial Electricity Authority to stop buying of electricity from individual solar rooftop. In other instance, permits were not obtained from unlucky lots draw in grid-connected solar farm. In another instance pertaining to off-grid MHP, permit was not obtained from DNP, so that adaptive management have been demonstrated done by modifying the outcomes to proactively focus on off grid systems, as mentioned above. Quality of adaptive management has been rated as Moderately Satisfactory.

With sufficient resources allotted for implementing the project M&E plan and existing GEF/UNDP standards, the project was monitored and evaluated against the targets agreed in the regularly updated project framework, its indicators and targets. The project has monitoring plan for key government focal points and UNDP CO. Chief of MHS Provincial Office and his staff from Strategic Planning Unit carried-out monitoring visits that aimed to measure implementation procedures, quality results and impacts that fulfill the needs of local people and MHS government. They reported with recommendations to the Project Board. UNDP CO senior staff scheduled regular monitoring visits to the project sites. Advices were made on effective implementation & gender approach to transfer of RE technologies. Quality of M&E: Satisfactory.

In terms of financial performance in 2015/2016 AWP budget requested, the expenditure of USD 205,868.87 and budget of USD **947,527.12**, the delivery rate translates to a low of 21.73% as of July 13, 2016. Project expenditures were relatively low in the reporting period, as deliverables of 2 major RE systems had to be put to an end and modification of activities/results needed to be identified and approved by the Project Board and UNDP. At this stage of the project implementation, the overall expenditure since inception is USD **1,735,731.45** compared to the total GEF budget of USD 2,712,700.00 or **64%** spent as of 31 December 2015. Delivery rate on budget requested: Moderately Satisfactory.

On the overall, the project's IP rating is Moderately Satisfactory.

General comments on Implementation Progress Rating

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Implementation Progress: Ratings Definitions	
Highly Satisfactory (HS)	Implementation of all components is in substantial compliance with the original/formally revised implementation plan for the project. The project can be presented as “good practice”.
Satisfactory (S)	Implementation of most components is in substantial compliance with the original/formally revised plan except for only few that are subject to remedial action.
Moderately Satisfactory (MS)	Implementation of some components is in substantial compliance with the original/formally revised plan with some components requiring remedial action.
Moderately Unsatisfactory (MU)	Implementation of some components is not in substantial compliance with the original/formally revised plan with most components requiring remedial action.
Unsatisfactory (U)	Implementation of most components is not in substantial compliance with the original/formally revised plan.
Highly Unsatisfactory (HU)	Implementation of none of the components is in substantial compliance with the original/formally revised plan.

Gender

All projects must complete this section.

This information is used in the UNDP-GEF Annual Performance Report, UNDP-GEF Annual Gender Report, reporting to the UNDP Gender Steering and Implementation Committee and for other internal and external communications and learning.

<p>Has a gender analysis been carried out this reporting period? <i>Please note that all projects approved in GEF-6 (1 July 2014 through 30 June 2018) are required to carry out a gender analysis.</i></p>	<p>Yes. Disaggregated gender in target communities was recorded.</p>
<p>If a gender analysis has been carried out what were the findings?</p>	<ul style="list-style-type: none"> • Women were cautious in learning and trying-out of new RETs. This might be because RE systems were complicated (MHP, SHS, biodigesters). Also in some cases the belief that this type of work belongs to men. However when introducing ICS, the only RE device that women were familiar with, high number of them (60% of total participants) actively participated and turned to be the ICS promoters. As such, in promoting RETs, <i>'gender-approached'</i> contents should be prepared for more/better realization among women. • Women could be active RE trainers. However for train the trainer course, learning/training transfer should be designed properly for women learners. Planning for next year (2017), if time allows, the project will develop a gender-based or <i>'women-friendly'</i> RE manual.
<p>Does this project specifically target women or girls as key stakeholders?</p>	<p>Yes, the project considered women as key development partners and tried to look for ways and means to build up their capacities in O&M to RE systems. Women could actively help disseminate knowledge & skills on RE.</p>
<p>Please specify results achieved this reporting period that focus on increasing gender equality and improving the empowerment of women. <i>Results reported can include site-level results working with local communities as well as work to integrate gender considerations into national policies, strategies and planning. Please explain how the results reported addressed the different needs of men or women, changed norms, values, and power structures, and/or contributed to transforming or challenging gender inequalities and discrimination.</i></p>	<ul style="list-style-type: none"> • Since, last year, the project worked with women volunteers on awareness building for realization of ICS. They were <i>'ICS barefoot promoters.'</i> In this year, 4 among these volunteers were recruited as ICS sale persons or ICS entrepreneurs. • The project trained some TAO female personnel on solar systems and SHS rehabilitation. They could learn and perform well.
<p>Please upload the gender analysis and any other documents related to the project's gender-related results.</p>	<p>N.A.</p>

General comments on Gender

<p>N.A.</p>

Communicating Impact

All projects must complete this section.

Tell us the story of your project, focusing on how the project has helped to improve people's lives.

Please use 500 words or less.

Avoid UN jargon, acronyms, and technical terms. Use plain language.

Include quotes from beneficiaries, if possible, and be sure to provide their names

The following questions can be used as guidance for your story:

What is this project about – the issue, interventions, and impacts?

Who are the beneficiaries of this project?

How have project interventions improved people's livelihoods?

What was the most notable achievement during this reporting period?

This text will be used for UNDP corporate communications, the UNDP-GEF website, and/or other internal and external knowledge and learning efforts.

1. Improve cookstove (ICS)

65% of the population in Mae Hong Son, especially people in rural and mountainous areas, use firewood for cooking, lighting and heating. Firewood consumption from each household is at least 165 kg/year or a total of 11,765 tons/year. This is one of many reasons of decreasing forest area, of which MHS used to have up to 90%. Average deforestation rate in Thailand is around 3% per year. No specific data is available for Mae Hong Son province.

Inefficient cooking stoves consume a lot of firewood, create harmful smoke and pollutants which affect to users' health.

The project supported 30 households from 2 active ethnic environmental conservation communities, the Tai Yai group of To Phae village, Mae Ngao sub-district and the Karen group of Pha To village of Mae Ki sub-district, Khun Yuam district in MHS to try-out the use of a new efficient cooking stove. The efficient cooking stove helped reduce time and frequency of firewood gathering from the forests -- a responsibility of Karen women. A stove reduces around 30% fuelwood, meaning that Karen women have to spend 30% less time on gathering fuel wood. It also reduced time for cooking and produces less smoke. Efficient cooking stove saves energy, time, fuel expense as well as save forests.

More info on: <http://www.th.undp.org/content/thailand/en/home/presscenter/articles/2016/03/03/undp-provides-access-to-clean-cooking-solutions-in-northern-thailand.html>

What is the most significant change that has resulted from the project this reporting period?

The most significant change could be positive or negative and could relate to any aspect of the project such as direct beneficiaries, communities, partnerships, policy. The purpose of this section is to capture lessons learned and changes that many not be revealed through the project's logical framework or other parts of the PIR.

This text will be used for internal knowledge management in the respective technical team and region.

"... we at UNDP firmly believe that innovation should also have a social impact. Innovation should not only benefit the bottomline of big corporations, but should have a positive impact on society. We call this Social Innovation... Let's innovate and use technology for social good."

[Martin Hart-Hansen, UNDP Thailand Deputy Resident Representative, at:

<http://www.th.undp.org/content/thailand/en/home/presscenter/speeches/2016/05/12/keynote-speech-by-martin-hart-hansen-undp-deputy-resident-representative-at-technology-innovation-collaborating-for-innovation-event-asian-institute-for-technology-bangkok-thailand-12-may-20169.html>]

Since last year, the project has tried-out a 'Happy End-User Approach' for the realization of ICS. The principle of this approach was that end-users of the project's promoted RE service provision should feel technologically comfortable. In addition, they should be able to access to affordable and reliable RETs. In this year, the project applied the same principle to sale of solar lantern to extremely poor end-users. Ones who needed this RE device most.

According to the project design, the sale of solar lantern activity was a business model aiming to provide end-users an option, in case they did not want or could not afford to pay the repair cost of their broken SHS rehabilitation (THB 600-44,000). The promoted solar lantern was an imported high quality with the price of THB 2,300/unit. However, after field survey, the project found out that almost of all households in the project's target area were very poor, with annual average income of THB 5,000-15,000/person, much lower than Thailand's poverty line (THB25,000/person/year). They were off-grid ethnic villagers resided on high mountains, who could not even afford to buy candles for daily lighting. In this case, the price of a solar lantern could be almost half of their annual income. Therefore, it was impossible for them to access to this imported RE device. As such, this extremely poor families that needed support most would otherwise be discarded by the project.

Under this circumstances, the project contacted UNDP's Procurement Unit to request to the Ministry of Foreign Affairs (MoFA) for 30% tax exemption of purchasing 200 imported solar lanterns, aiming to lower the sale price. But MoFA declined. The project then made another effort by negotiating to BGET and communities on the possibility of barter trade for solar lanterns. This meant very poor clients could use their agricultural produces or home products such as rice, raw coffee beans, or cloths in an exchange to a solar lantern. The result went well with exchange to Karen cloths/ bags. Now, the project could provide 200 units of solar lanterns to poor end-users.

Development innovation -- in term of social good that has a positive impact to society -- can be just a simple way as this barter trade. It helps UNDP/GEF reach more marginalized people, who need the support most, at less/same cost, more efforts; but with better & happier results.

Describe how the project supported South-South Cooperation and Triangular Cooperation efforts in the reporting period.

Describe the main focus of the efforts. What is the evidence that the initiative(s) contributed to results?
This text will be used for internal knowledge management in the respective technical team and region.
None

Project links & social media

Please list below the website addresses (URLs) that exist for this project, including any links to social media sites. Please include: Project website, Project page on the UNDP website, Adaptation Learning Mechanism (UNDP-ALM) platform, Facebook, Twitter, Flickr, YouTube, Google +	https://www.facebook.com/UNDPThailand/ https://www.facebook.com/UNEPROAP/posts/1185802754772108 https://www.facebook.com/undpasiapac/posts/1738804959666782 https://www.youtube.com/watch?v=Dk1v2-hXH10&feature=youtu.be https://www.youtube.com/watch?v=rrWu5Gt3hew
Please share hyperlinks to any media coverage of the project, for example,	http://region3.prd.go.th/ct/news/viewnews.php?ID=160315124140 http://www.spcg.co.th/index.php/en/news/detail/385/

stories written by an outside, external source.	
Please upload any supporting files, including photos, videos, stories, and other documents.	N.A.

General comments on Communicating Impact

N.A.

Partnerships

All projects must complete this section. Please enter "N/A" in cells that are not applicable to your project.

This information is used to get a better understanding of the work GEF-funded projects are doing with key partners, including the GEF Small Grants Programme, indigenous peoples, the private sector, and other partners. The data may be used for reporting to GEF Secretariat, the UNDP-GEF Annual Performance Report, UNDP Corporate Communications, posted on the UNDP-GEF website, and for other internal and external knowledge and learning efforts. The RTA should view and edit/elaborate on the information entered here.

Partners	<i>Give the name of the partner(s), and describe the partnership, recent notable activities and any innovative aspects of the work. Please do not use any acronyms. (limit = 2000 characters for each section)</i>
Civil Society Organisations/NGOs	None for this year.
Indigenous Peoples	Indigenous hill tribes were the main beneficiaries of this project.
Private Sector	The project engaged SPCG Public Company Limited, one of the largest solar farm developer, to support additional capacity of the solar rooftop demo system installed at the Mae Hong Son Provincial Hospital. According to the plan, the project would install a 500W demo system at a government building. However, with high electricity bill of THB 700,000/month, the project could get donation from this company and the system capacity increased from 500 W to 2.5 kW.
GEF Small Grants Programme	The project did not cooperate yet with the Small Grants Programme.
Other Partners	<p>The project has been working with several government agencies at central/ regional level of Min. of Energy, MoNRE and engaged with many provincial and local agencies including military, community energy volunteers.</p> <p>DEDE for instance, was heavily involved in the design and planning of MHP projects, including in training of locals to assess the feasibility of MHP in their respective areas.</p>

General comments on Partnerships

N.A.

Environmental or Social Grievance

This section must be completed by the UNDP Country Office if a grievance related to the environmental or social impacts of this project was addressed this reporting period.

It is very important that the questions are answered fully and in detail.

If no environmental or social grievance was addressed this reporting period then please do not answer the following questions.

If more than one grievance was addressed, please answer the following questions for the most significant grievance only and explain the other grievance(s) in the comment box below.

What environmental or social issue was the grievance related to?	None
What is the current status of the grievance?	N.A.
How would you rate the significance of the grievance?	N.A.
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.	N.A.

Rating	Description
Minor	The grievance had/has a low impact on the day-to-day implementation of the project.
Significant	The grievance had/is having a significant impact on the day-to-day implementation of the project, but the project is still expected to achieve its objective.
Serious	The grievance had/is having a serious impact on the day-to-day implementation of the project, and there is a risk (50% or higher) that the project may not be able to achieve its objective.

Sustainable Development Goals

The UNDP-GEF Technical Advisor and Programme Associate must complete this section. Please select one or more Sustainable Development Goals that align with the results, impact and type of work of the project. For more information on the Sustainable Development Goals please visit <http://www.un.org/sustainabledevelopment/>.

<input checked="" type="checkbox"/>	Goal 1	End poverty in all its forms everywhere
<input type="checkbox"/>	Goal 2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
<input type="checkbox"/>	Goal 3	Ensure healthy lives and promote well-being for all at all ages
<input type="checkbox"/>	Goal 4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
<input type="checkbox"/>	Goal 5	Achieve gender equality and empower all women and girls
<input type="checkbox"/>	Goal 6	Ensure availability and sustainable management of water and sanitation for all
<input checked="" type="checkbox"/>	Goal 7	Ensure access to affordable, reliable, sustainable and modern energy for all
<input type="checkbox"/>	Goal 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
<input type="checkbox"/>	Goal 9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
<input type="checkbox"/>	Goal 10	Reduce inequality within and among countries
<input type="checkbox"/>	Goal 11	Make cities and human settlements inclusive, safe, resilient and sustainable
<input type="checkbox"/>	Goal 12	Ensure sustainable consumption and production patterns
<input checked="" type="checkbox"/>	Goal 13	Take urgent action to combat climate change and its impacts
<input type="checkbox"/>	Goal 14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development
<input type="checkbox"/>	Goal 15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
<input type="checkbox"/>	Goal 16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

□	Goal 17	Strengthen the means of implementation and revitalize the global partnership for sustainable development
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