6.4 Activities related to social preparation

(1) OJT on social survey at a model project site and other existing project sites;

1) Purpose

The purpose of OJT on social survey including monitoring activities was to effectively provide knowledge and skills for social preparation to the C/Ps of REMD and ARECs so that they would understand how to conduct social survey, what information to be collected, and what to be assessed. The goal of the activities was that the C/Ps would be capable to instruct and advise the same to beneficiaries and proponents of LGUs on social survey.

2) Activities

Since monitoring activities of existing BEP projects after installation had not been conducted, DOE or REMD did not comprehend the situation of community organizations or BAPAs before the start of this Project. Therefore, OJT on social survey in the first two years (FY2004-2005) was conducted focusing on monitoring of RE systems.

OJT were conducted 6 times at the existing solar PV systems (BCS and SHS) and MHP plants, and most of the REMD staff, DOE field office staff and some ANECs participated in the OJT activities.

Scope of social survey includes not only monitoring of community beneficiaries but also initial socio-economic survey of communities during project formulation stage. Therefore, in the last three years (FY 2006-2009), the Team conducted socio-economic survey for new projects in addition to monitoring activities. The Team visited totally 18 sites for Solar PV systems and MHP sites, and provided OJT to staff from DOE-REMD, DOE-Field offices and ANECs.

In the course of the activities, the Team prepared questionnaire sheets and monitoring sheets for social survey together with the C/Ps.

Social Survey at Barangay

Social Survey at Barangay

3) Result of Activities

a) The two assigned C/Ps of RMED had few experience of fieldwork in the past. All activities that they carried out in the third year were new to them. Through repeatedly conducted activities of OJT on social survey, the C/Ps of REMD became confident of conducting such survey.

b) During the monitoring of existing BAPAs, since the C/Ps found that there was no regular pattern of ways of bookkeeping, they proposed to make a standard format and introduce it to BAPAs.

c) The C/Ps got an idea how to evaluate willingness to pay and capacity to pay through the OJT on social survey. Further more, they understood concept of the necessity to pay for the sustainable the project. When they held consultations with local residents at sites, they actively explained the electricity tariff setting.

4) Efforts and Lessons Learned

When the Team selected the rehabilitation project sites, the Team encountered difficulty to evaluate current status of community beneficiaries or BAPAs of existing RE systems because there was limited monitoring data for review. So, the Team realized that monitoring is important not only for technical aspects but also for social.

⑵ OJT on BAPA formation（OJT）

1) Purpose and Background

The Team conducted BAPA formulation and re-training at the rehabilitation sites and the pilot project site for OJT purpose. The OJT was aiming for the C/Ps to learn there are several steps for BAPA organization and what is required for each step. And also, it was expected them to be capable in transferring that knowledge to the LGUs and beneficiaries. The necessary information for the community beneficiaries was discussed with the C/Ps as follows:

- Benefits of RE project
- The role and responsibility of beneficiaries
- The tariff setting method that is based on not only capacity-to-pay or willingness-to-pay, but also on the funds required for operation and maintenance of the systems.

2) Activities

In FY2006, based on the findings of problematic existing project sites, we chose three MHP project sites to reactivate the BAPAs. Japanese expert initiated the training for BAPA strengthening, using the PCM method of problem finding and solving, and the C/Ps observed it. As for the BAPA management, the staff of an ANEC, who had sufficient skill in community organizing and communication, conducted leadership training and team building training. Regarding financial management, the C/Ps explained to the BAPA officers as the first trial.

In FY2007-FY2009, two PV rehabilitation projects in Leyte and in Bohol and One pilot micro hydropower project in Panay and two MHP rehabilitation projects were implemented. OJT on BAPA formulation was also conducted through implementation of the a series of procedures.

a) BCS rehabilitation project in Leyte

The rehabilitation project was started in Nov. 2007, and completed until Feb. 2008.

Basically, there is not big difference between the approach of social preparation for PV projects and the same for MHP projects. Only deference is O&M cost. So, inconsideration of the difference, OJT on BAPA formulation was conducted at the PV rehabilitation project.

In June 2007, in order to identify issues and concerns about BAPA performance in the BCS, Japanese expert and the C/Ps of REMD conducted social survey. User training was also performed during the survey.

As a result of interview, the following facts were found:

- In the Panay Island, about 40 BCS were installed form 1999 to 2003.
- Three BAPA(s), which was inspected, had not been operated any more. The reasons were as follows:
  - ✧ The lifetime of the battery distributed to each house was over.
  - ✧ The beneficiaries could not purchase new batteries.
  - ✧ The beneficiaries were back to use kerosene again.

Bbefore revision of BEP implementation manual in 2004, LGUs had a responsibility to shoulder the cost for purchasing batteries for PV BCS projects according to the previous standard MOA. But, the barangays, which the Team monitored, were electrified before 2004. In the case that the LGU could not shoulder the committed cost, the barangays have not been electrified so far.

Meanwhile, DOE changed its procurement procedures for PV projects in 2004. Currently, DOE are the one who directly purchase batteries.

In November 2007, a social survey was conducted in order to grasp the present use of BCS, BAPA performance, and the people's willingness to carry out the rehabilitation in Barangay Balugo, Municipality of Capoocan, on Leyte Island. This was the first step in the monitoring process to identify the present status of the renewable energy project.

In January 2008, further training on reorganization of the BAPA was conducted at the same site. The Team held consultation with the potential beneficiaries for two days on why the BAPA is needed, and the necessity of tariff collection and by-laws. All participants understood and accepted the explanations. Then, new BAPA officers were elected for the project.

Through May 2008 to May 2009, the monitoring BAPA performance was carried out three times.

Barangay Consultation

Explanation on Electricity Tariff

1	Project duration	November 2007 – February 2008	
2	Total number of household in the Brgy.	72	
3	No of BCS beneficiaries	30	
4	Social preparation and BAPA formation activities	Nov.2007	Social survey at the site, Consultation with the beneficiaries as social preparation
		Jan. 2008	Reorganizing BAPA
		May 2008	Monitoring BAPA management
		Jan. 2009	Monitoring BAPA management
		May 2009	Monitoring BAPA management

b) BCS (SHS) rehabilitation project in Bohol

Barangay Consultation

Barangay Consultation

1	Project duration	June 2008 – October 2008	
2	Total number of household in the Brgy.	120	
3	No of BCS beneficiaries	50	
4	Social preparation and BAPA formation activities	Jun.2008	Social survey at the site, Two times consultation with the beneficiaries as social preparation
		Aug. 2008	Reorganizing BAPA
		Oct. 2008	Trained BAPA
		Jan. 2009	Monitoring BAPA management
		Jun. 2009	Monitoring BAPA management

c) MHP pilot project in Panay

The pilot MHP project was started in June 2007 and completed in January 2009. The MHP pilot project was aiming for the C/Ps to learn how and what to do for social preparation activities during project formation and BAPA formulation stages. The Team and the C/Ps carried out necessary activities such as social survey, coordination with the stakeholders (LGU, EC and ANEC), consultation with the beneficiaries, and BAPA organizing.

In June 2007, social survey for selection of the MHP pilot project site was carried out. The survey about the following item was mainly conducted at the seven candidate sites selected by map study. The way of the survey was mainly

interviews with ECs and LGUs for:

- The present electrification situation and electrification plans around the candidate sites
- LGUs' eagerness to invite electrification projects and willingness to cooperate to the projects.

In two sites where the necessity for electrification is high among seven candidate sites, the Team interviewed with the villagers. As a result, the following matters were clarified.

- The villagers have strong needs of electricity.
- There is an active organization, which is maintaining irrigation systems, as a community-based organization in the barangay.
- The villagers have high willingness to cooperate to the electrification projects.

In September 2007, the Team conducted a socio-economic survey at Barangay Poblacion, Sebaste. At the same time, the Team held the first Barangay consultation in order to help the beneficiaries properly understand the features of MHP system and responsibilities of the beneficiaries for maintaining MHP system.

In November 2007, the Team held the second Barangay consultation to explain more detailed information of the following topics: 1) What is a BAPA (Barangay Alternative Power Association), 2) Tariff setting, and 3) Advantages and disadvantages of the electrification project. During the consultation, the Team explained not only the concept of hydropower but also practical information of electric tariff setting with an example and effective usage of electricity. It was assumed that the beneficiaries could grasp the project concept and their responsibilities.

Since the C/Ps had experienced repeated social preparation activities such as workshops, consultation meetings and BAPA training in barangays, they became capable conduct BAPA organization by themselves. So, the BAPA organization for the pilot project was conducted only by the C/Ps in February 2008.
In November 2008 and in January 2009, the C/Ps conducted, also only by themselves, BAPA training particularly on actual role of each BAPA officer and the financial management.

The inauguration of the project was held in January 2009, and the BAPA's independent operation was started. The Team monitored the BAPA in May and June 2009, and confirmed that the BAPA is now functional well.

Barangay Consultation

Barangay Consultation

1	Project duration	June 2007 – January 2009	
2	Total number of household in the sitio	64	
3	No of BCS beneficiaries	50	
4	Social preparation and BAPA formation activities	June 2007	Social survey at the site, Interview with the potential beneficiaries
		Sep. 2007	Detail social survey, consultation with beneficiaries as social preparation activity
		Nov 2007	Continuous consultation with beneficiaries as social preparation activity
		Feb. 2008	Organized BAPA
		Nov. 2008	Trained BAPA
		Jan. 2009	Trained BAPA
		May 2009	Monitoring BAPA management
		June 2009	Monitoring BAPA management

d) MHP rehabilitation project in Kalinga

Two MHP rehabilitation projects in Kalinga were implemented for FY 2008. The Team and the C/Ps of REMD conducted a BAPA strengthening at the site, particularly emphasized the electric tariff setting. This was also used to evaluate if the knowledge and skills on social preparation had been firmly transferred to the C/Ps.

BAPA Training

BAPA Training

1	Project duration	Sep. 2008 – Dec.2008	
2	Total number of household in the Brgy	Brgy. Dao-Angan	98
		Brgy. Gawa-an	85
3	No of BCS beneficiaries	Brgy. Dao-Angan	98
		Brgy. Gawa-an	85
4	Social preparation and BAPA formation activities	Sep 2008	Strengthened BAPA
		Nov. 2008	Strengthened BAPA by KASC ANEC
		Dec. 2008	Strengthened BAPA by KASC ANEC

e) Five BAPA formations in Kalinga and Ifugao province

DOE had five MHP projects under "Construction of Micro-hydro Plant for the Electrification of Upland Dwellers in Northern Luzon" under a Japanese grant aid project. The C/Ps were able to newly organized five BAPAs at the project sites only by themselves in November 2007. However, since the construction of micro hydropower plants had unfortunately not been started yet, the only BAPA organizing was conducted.

3) Result of Activities

a) Through repeated activities, such as consultation meetings in barangays, the C/Ps became confident of explaining and answering questions on the necessity of the BAPA, roles of the BAPA, and responsibilities of BAPA officials. Therefore, they are now capable of conducting social preparation for RE rural electrification projects.

b) The C/Ps have understood the basis of electric tariff setting and can explain it to beneficiary.

c) The C/Ps have understood the basic system of micro-hydro and BCS and could

response to beneficiary, when the question was raised from them.

4) Efforts and Lessons Learned

a) The repeated OJT activities were very effective for the C/Ps to have confidence and their responsibilities on social preparation.
a) Despite of the repeated instruction and supports by DOE, ANEC and LGU, the management BAPA in Barangay Balugo is still very weak, and it tariff collection is not functioning well. This is mainly due to the beneficiaries' experience that they were able to use electricity without payment. So, initial understanding of beneficiaries strongly influences their way of thinking, and then affect to the sustainability of the projects later on. In addition, the fact that most of the beneficiaries do not have stable income source because they are seasonal worker for sugar cane production in one of the issues. It means that unstable income of beneficiaries is a barrier of sustainable tariff collection.

(3) Workshops and Seminars on social Preparation and BAPA Formation

1) Purpose and Background

Most of the C/Ps of REMD and ANECs had been aware of importance of social preparation for sustainable development of RE systems for rural electrification. However, they didn't have common understanding what to be done for social preparation. So the Team held workshops and seminars to establish the standard approach of social preparation and BAPA formation and to disseminate it to the other related stakeholders.

2) Activities

In November 2006, the first 2-days workshop was held in Manila inviting concerned stakeholders from DOE, ANECs, LGUs and NGOs in order to have common understating on social preparation under the rural electrification project and to discuss the role of each stakeholder. The Team invited Indonesian, IBEKA, to share their experiences in Indonesia with the participants.

In 2007 and 2008, the Team held social preparation workshops twice in Tabuk, Kalinga and Banawe, Ifugao where five MHP projects were planned under Japanese Grand Aid project. These workshops were intended to disseminate the knowledge of social preparation to local stakeholders over OJT, and also indirectly to support the said projects.

Looking at the C/Ps, only two REMD staff members were assigned as the C/Ps for social

preparation until last year of 2007. Though they were making efforts to provide their services for social preparation, manpower for all BEP projects was insufficient due to the huge number of projects implemented. In order to impart the knowledge and skills for social preparation to other REMD staff and DOE officials, the Team conducted further training on social preparation 2008 in Manila instead of Provinces.

No.	Year	Date	Venue	No. of Participants
1	2006	Oct. 16-17	Manila	98
2	2007	Jan. 30-31	Kalinga	61
3	2007	Feb. 1-2	Ifugao	38
4	2008	Jan. 15	Kalinga	45
5	2008	Jan. 17	Ifugao	21
6	2009	Nov. 5-6	Manila	35
			Total	298

[2006]

[2007]

[2008]

[2009]


3) Results of Activities

a) Though most of the REMD staff and ANECs staff understood the necessity and importance of social preparation for the sustainability of RE systems in rural areas, there was no common understanding on exact methodology of social preparation. Though the series of workshops and seminars, common understanding on social preparation was established among stakeholders
b) When the C/Ps performed as trainers during the workshop in Kalinga and Ifugao, they made presentation just following the expert's instruction without confidence. However, since they have experienced in repeatedly conducting social preparation activities over OJT and workshops, they are now confident of instructing to others.
c) The last training workshop was mainly lead by the C/Ps of REMD. The C/Ps have a thorough understanding of the process of social preparation and BAPA organization based on experience gained through the previous OJT and workshops. Their actual site experiences gave them the confidence to effectively train other people.

4) Efforts and Lessons Learned

Combination of lectures and OJTs at the sites were really make the C/Ps understood what they have to do for social preparation.

(4) Development of Guide for Social Preparation and BAPA Formation

1) Purpose and Background

DOE-REMD had a project implementation Manual that briefly describes social preparation and BAPA formation. However, its information was not enough to conduct social preparation activities. The Team and the C/Ps developed a new guide for social preparation and BAPA formation and management to provide guidance on social preparation to stakeholders.

2) Activities

A guide on Social preparation, BAPA formulation and management, which was drafted in 2007, was used in trial during the OJT for two years, it has been revised and improved. The main contents of the guide are as follows:

- Explanation of social preparation process,
- BAPA formulation and management,
- Introduction of sample social survey questionnaires and monitoring survey formats,
- Electric tariff setting for the micro-hydropower systems and the solar PV systems
- Sample formats of by-laws of BAPA for the micro-hydropower systems and solar PV systems
- Introduction of financial management format
- Registration of BAPA for legal status
- Safety use of electricity

3) Result of Activities

There was no standard approach for social preparation activities and BAPA formation in the past, and the way of social preparation was depending on the individual capability. This guidebook is secured a standard approach of social preparation and BAPA formation.

4) Efforts and Lessons Learned

Preparation of a guide on "social preparation and BAPA formation and management" was a good opportunity for the C/Ps to deepen their knowledge and understanding because they had to review what they learned.

(5) Development of Educational Video for Social Preparation

1) Purpose

Though social preparation requires flexibility in accordance with the characteristics and culture of target areas, the basic concepts and approaches should be the same. Educational video for social preparation was developed to show and instruct stakeholders the basic and standard approaches. It aims to disseminate the proper social preparation and BAPA formation to AREC, LGUs and other related agencies, which will be involved in future RE-based electrification projects.

2) Activities

The Team contracted out the production of the education video to the local video company of Asian Institute of Journalism and Communication (AIJC). The Team provided all necessary photos and documents to the AIJC and also asked them the footage shooting at the OJT sites. Several meetings with AIJC together with the C/Ps of REMD were held to discuss to the flow of video story, making the script, and visualization of video techniques. The English version was produced in January 2009, and then it was translated in Tagalog dialect in June 2009.

3) Results of Activities

a) The first educational video of social preparation and BAPA formation was developed.
b) 100 DVD of educational video were submitted to DOE for delivering to the concerned agencies, such as ANECs and LGUs.

4) Efforts and Lessons Learned

a) The video was created in English and Tagalog with simple words for local people to easily understand the contents.
b) The video emphasizes that social preparation is not one time activity, and it require facilitators to be patient and to repeatedly conduct it until beneficiaries fully understand.

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Educational Video for Social Preparation

6.5 Policy and Procedure of RE based rural electrification

1) Review of implementation framework and procedures of RE-based rural electrification projects

The REMD prepared the existing "Project Implementation Manual for DOE-Funded Barangay Electrification Project" in January 2004 to provide harmonized procedures for off-grid RE electrification projects to be implemented by the DOE. However, since there is a discrepancy in procedures, the REMD has not complied with the manual in implementation of the RE project under the BEP. And also, since it is targeting only solar PV projects, it is not applicable to micro-hydro projects. The Team found necessity to review and/or revise it to be more practical in procedures and more specific in responsibilities of stakeholders.

On the other hand, in order to introduce beneficiaries' self-efforts into procedures of project implementation, barangay resolution and LGU resolution were considered as requirements of the project implementation. This is to urge beneficiaries to participate in the projects.

We reviewed the existing manual, and newly prepared "Project Implementation and Monitoring Manual".

2) Standard MOA and implementation guideline for DOE-funded RE project

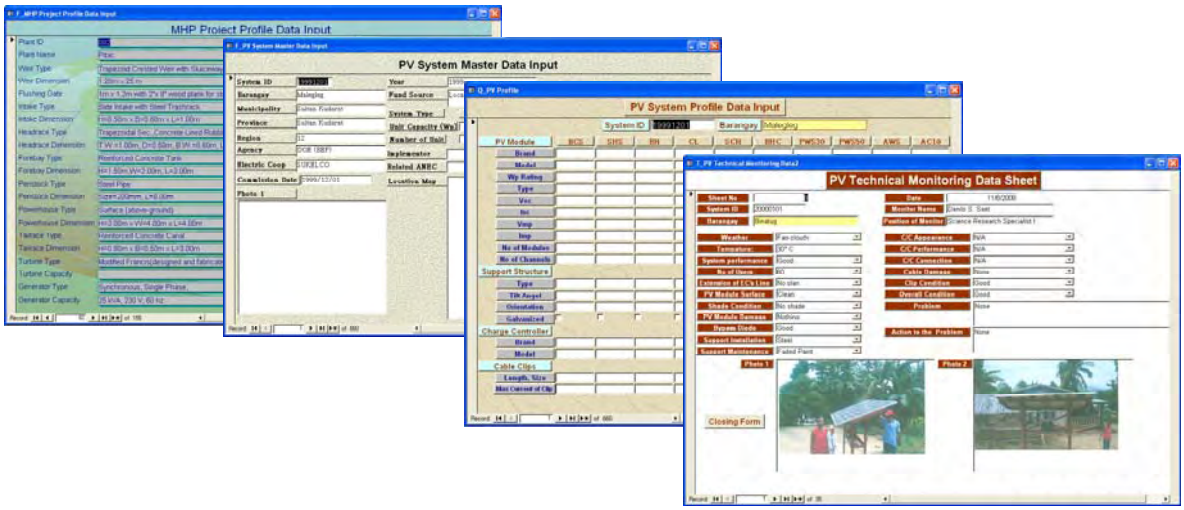
Through the implementation of the MHP pilot project and rehabilitation projects, we have reviewed the Memorandum of Agreement (MOA) to make stakeholders' responsibilities more clear and standardized. It was included in the "Project Implementation and Monitoring Manual" mentioned above.

3) Monitoring framework and monitoring database for RE based rural electrification project

Results of the examination conducted on the RE monitoring system showed that the most practical way is to utilize the current functions of ANECs as the main body of the monitoring structure rather than newly inviting third parties from the outside. Thus, the "Guideline for Monitoring and Management of Renewable Energy Projects for Rural Electrification" was drafted, and a monitoring database was developed in FY 2007.

In FY 2008, the monitoring database was modified based on the comments from the C/P. In order to activate the monitoring framework, the Team held a workshop on the monitoring framework in August. The Team discussed with the C/P the structure for RE system monitoring, how to use the monitoring database and an action plan for monitoring data acquisition as shown in Appendix 5. Based on this discussion, the C/P sent the monitoring guideline to ANECs and requested that they input monitoring data and submit it to the DOE. However, some of ANECs submitted monitoring data, and

other ANECs did not submit it.
Therefore, we held ANEC workshop in June 2009 to explain monitoring framework and monitoring method to all ANECs.



RE Monitoring Database

4) Criteria for pre-qualification/accreditation of suppliers/implementers for DOE-funded RE project

With regard to an accreditation and certification system for PV technology, it was expected that the CBRED (Capacity Building to Remove Barriers on Renewable Energy Development in Philippines) under assistance by UNDP would play a major role in developing the system. However, since CBRED's activities have been declined, it has become necessary to review the direction of the activities in establishing a credible PV accreditation and certification system. Taking a practical introduction of systems into consideration, the Team drafted the criteria to be used for pre-qualifying implementers and suppliers under the BEP and applied it to actual projects.

Applying the pre-qualification criteria requires coordination with related agencies to ensure consistency with related standards. The Team researched the government procurement law "ACT No.9184", the company registration system drafted by CBRED and the pre-qualification system applied to RPP. On the basis of this research, the Team discussed with the C/P and consequently developed a draft of pre-qualification criteria. After preparations were finalized, the Team discussed how best to incorporate it into the actual bidding procedures with the members of BAC which manages procurement in the DOE. Finally, the Team and BAC agreed to add the pre-qualification criteria into the TOR made by REMD. Hence, the TOR including our criteria was prepared and forwarded in accordance with the decision procedures of the DOE.

6.6 Other Activities

1) JCC Meeting

Joint Coordinating Committee (JCC) Meeting was supposed to be held more than once a year. However, it was never held in the first two years. Therefore, the first JCC meeting was held in February 2007. The second and third JCC meetings were conducted in November 2007 and February 2009 concurrent with the project mid-term evaluation and the project terminal evaluation respectively.

2) Project Seminar

a) Project Seminar in November 2007.

Although many efforts had been taken to enhance C/Ps' capacity development since June 2004, not only other donor agencies, but also other bureaus of the DOE, were not familiar with this project. Transferred knowledge and technology had been distributed to limited areas. Therefore, the expert team held the project seminar as follows, inviting stakeholders of rural electrification. At the seminar, we requested C/Ps and project beneficiaries to make presentation from recipient side in consideration that the seminar should not be a one-side game. In total, 70 people participated in the seminar. The seminar seemed to spark the participants' interest in the project and be a good forum for the C/Ps and beneficiaries to list their accomplishments.

b) Project Seminar at Project Termination in June 2009

In order to share accomplishments and lessons learned to related stakeholders of RE-based rural electrification for sustainable development of RE systems, the Team held the project seminar at project termination on June 29, 2009, inviting stakeholders of rural electrification. In total, 80 people participated in the seminar.

Project Seminar

Project Seminar (Opening)

3) Project Midterm Evaluation

JICA dispatched the mid-term project evaluation team to the Philippines from October to November 2007. Based on the results of the evaluation, the Project Evaluation Team recommended: 1) Strengthening policy and management of the project, 2) Sharing the outcome of the project, 3) Enhancing public relations of the project as a successful model case (model project), and 4) Further revision of the Project Design Matrix (PDM). Reflecting the recommendation made by the evaluation team, the project seminar was held; promotion video on sustainable RE-based electrification project and educational video on social preparation were produced; and PDM has been revised.

4) Project Terminal Evaluation

Since termination of this Project was originally scheduled in May 2009, JICA conducted the Project terminal evaluation from middle of January to early February 2009 a half year ahead of the termination. Adjusting the timing to the terminal evaluation, the 3rd Joint Coordinating Committee (JCC) meeting was held on February 4, 2009 to confirm the project accomplishments, results of the terminal evaluation and future action plan among the JCC members.

The project terminal evaluation team concluded that the Project has generally been effectively conducted from the viewpoints of technology transfer to and capacity development of the target group. In particular, key micro hydropower technologies that are regarded advanced subjects have been successfully transferred to top tier subgroups. However, there are some issues to be considered in order to get maximum outputs from the Project. So, the evaluation team recommended immediate actions as follows:

- Undertake necessary preparation activities for the termination of the project
- Conduct sustainability preparation seminar-workshops with ANECs and other relevant organizations
- Conduct extended work for monitoring the pilot and rehabilitation projects and BAPAs

The recommendations made by the evaluation team were reflected the activities in FY 2009.

5) Promotion Video

For public relations, the Team carried out the production of a promotional video for sustainable RE-based rural electrification, creation of a Project website and an update of project news.

Promotion Video for
Sustainable RE Projects

7 Accomplishment

7.1 Micro-hydropower Technology

(1) Current Status of C/Ps and Other Target Groups

- Japanese experts have continuously instructed the C/Ps in micro-hydropower planning through OJT and short lectures. The C/Ps themselves carried out a topographic survey at the site, designed and prepared the drawing, and estimated costs for the rehabilitation projects under expert instruction. Therefore, they have learned the necessary technical requirements necessary for project planning.
- In addition, the C/Ps became capable of independently conducting function tests using instruments and a water resister and estimating the operational condition of the turbine-generator based on the measured data.
- Training in micro-hydro turbine manufacturing has been conducted twice in Indonesia and once in the Philippines. Trainees experienced actual fabrication of a turbine during the training. The purpose of the training was to provide the necessary knowledge and skills required for turbine manufacturing. This task was successfully accomplished by the efforts of the Indonesian trainers and trainees themselves. The total number of trainees was twelve. Further, the trainees are expected to play a leading role in the dissemination of turbine manufacturing technology throughout the Philippines as trainers and to start manufacturing turbines with the knowledge and skills they have obtained. In the third training in the Philippines, the former trainees worked as trainers. Manufacturing of the turbines for rehabilitation and pilot projects can be attributed to their experience gained through prior training, and will serve as models for the future.
- The Japanese experts held training in ELC fabrication three times, in which the participants actually fabricated a single-phase ELC, which is commonly adopted for MHPs in the Philippines. The participants became capable of designing and fabricating a control board of the single-phase ELC on their own. Some of the ELCs which were fabricated during the training have been used for rehabilitation of the existing MHP plants.

(2) Achievement Indicators

1) Number of personnel who can carry out planning of MHP projects:

According to evaluations regarding the number of capable personnel involved in the site survey and the planning of MHP, two are from REMD, one from KASC-ANEC and two

from CPU-ANEC. In addition, during the MHP review training, four persons among 14 trainees from DOE and PNOC were able to obtain a score of 80% or higher on the proficiency test..
Hence, the number of personnel who can carry out the planning of MHP projects grew to nine from the target groups.

2) Number of projects, which are planned, and implemented by trained personnel:

Under this Project, one MHP pilot project and seven MHP rehabilitation projects have been implemented so far. Aside from that, the DOE has an its own on-going project for which REMD staff have been conducting site surveys, planning, designing and supervising.

3) Number of trained personnel who can conduct or supervise fabrication of water turbines:

In total, twelve persons have participated in water turbine manufacturing training in Indonesia and in the Philippines under this Project. During the training, all participants independently fabricated a water turbine. Some of them have already provided training to others and fabricated water turbines based on their knowledge and skills obtained during the previous training.

4) Number of trained personnel who have increased knowledge though the training and actual fabrication of ELCs:

In the past, six trainees participated twice in ELC fabrication training and another six trainees participated three times in the same training. All of them were able to independently fabricate ELC during the training. Some of them have installed the ELCs at the actual sites after modifying the wiring and devices on their own. The Team is confident in their ability to fabricate and/or supervise the fabrication of ELC.

5) Number of water turbines, which are fabricated and/or supervised by trained personnel:

During the past water turbine manufacturing training, three turbines were fabricated. One turbine was fabricated for the pilot project, using theT-12 design, which was transferred during the training. And another turbine was designed with CeMTRE's design and fabricated for the rehabilitation project. So, a total of five (5) turbines have been fabricated and/or supervised building on the knowledge and skills obtained under this Project.

6) Number of ELCs, which are fabricated by trained personnel:

During the ELC training in 2007, six single phase ELCs, which is the common type for

micro-hydropower in the Philippines, were fabricated and some of them have been applied to actual sites. Also, another three ELCs were fabricated during the third ELC fabrication training in 2008. A total of nine (9) ELCs have been fabricated by the trainees who participated in the previous training.

7) Number of regional CeMTRE:

The Team has selected KASC, CPU and Ateneo de Davao University as regional CeMTRE in order to expand the functions of the CeMTRE in DLSU to the regional university. Enhancement of their capability is now on going.

Indicators	Target	Achieved	Explanation
Number of personnel who can carry out planning of MHP projects	6	9	2 REMD, 2 CPU-ANEC, 1 KASC-ANEC, 4 REAMD & 1 PNOC
Number of projects which are planned & implemented by trained staff	8	8	1 pilot project and 7 rehabilitation projects
Number of trained personnel who can do or supervise fabrication of water turbines	8	12	For fabrication: 3 (2 CeMTRE, 1 KASC-ANEC) For supervision: 8 (2 REMD, CPU, BSU, MFO, CLSU, CMU, SU)
No. of trained personnel who has increase knowledge through training and actual fabrication of ELCs	12	12	6 trainees participated the training 3 times, and 6 trainees participated the training twice. Repeated training makes the trainees increase the knowledge of ELCs.
No. of water turbines which are designed and fabricated by trained personnel	4	5	2 turbines during the Indonesia training and 1 during trainings in Philippines 1 turbine for rehabilitation project and 1 for pilot project
No. of ELCs which are designed and fabricated by trained personnel	10	9	4 ELCs were installed at rehabilitation project, 1 ELC is at pilot project. 2 are utilized at KASC-ANEC, 1 is installed by SIBAT(one of the pariticpant's NGO), 1 is used for demonstration at CeMTRE.
No. of Regional CeMTRE	3	0	CeMTRE had just started discussions with CPU, KASC and Ateneo de Davao University about establishment of "regional CeMTRE". No formal linkage has been formed as yet.

7.2 PV technology

(1) Current Status of C/Ps and Other Target Groups

- Through the solar PV Trainer Qualification Training and the OJTs, the PV technology has been disseminated not only to the C/Ps, but also to all REMD and Field Office staff. In particular, the qualified engineers have gained confidence in their investigation, planning, implementation and inspection skills related to solar energy projects, and they have been proposing activities for further skill enhancement and dissemination of this technology.
- In 2008, PV engineer training was conducted to develop training materials which will be used for ANECs to transfer PV technology to local engineers in the future.

(2) Achievement Indicators

1) Number of qualified trainers/engineers:

The number of qualified trainers and engineers stabilized at 30 by the end of FY 2007. Since the Team changed PV training's program in 2008, the number was not able to increase. However, the expansion of PV technology by DOE is expected.

2) Number of training sessions conducted by trained personnel alone:

Qualified trainer of Mindanao Field Office (MFO) and Bicol University (BU) conducted independent PV training sessions and such training was also conducted during the PV rehabilitation project.

3) Number of projects, which are planned and implemented by trained personnel:

The number of PV projects, which were planned and supervised by qualified trainers were respectively 48 in 2005, 67 in 2006, 90 in 2007 and 3 in 2008. The qualified trainers of REMD are playing main roles in the implementation of these projects.

4) Number of personnel who can test PV equipment (PV modules, Charge controllers and Inverters):

In order to increase the number of engineers who can check the performance of PV equipment such as PV modules, charge controllers and inverters properly, the Team conducted training on the PV performance test method twice from June 2008 to February 2009. The training consisted of lectures and practice. And the target trainees were mainly qualified trainers of REMD. During the period, a total of 11 persons participated in the training. Results of the training yielded ten (10) persons out of 11 who were able to complete the training and become capable enough to conduct performance

tests of PV equipment.

	Target	Achieved	Explanation
Number of qualified engineers	30	30	Among 107 training participants, 30 were qualified as "qualified engineers". 10 REMD-DOE, 5 ANECs, 4 MFO, 1 VFO, 2 LGUs, 2 SPOT, and others,
No. of trainings conducted by trained personnel alone	5	9	MFO trained personnel conducted a total of 8 trainings in the Visayas areas, while the trained personnel from Bicol University had conducted 1 PV training
No. of projects which are planned and implemented by trained personnel	200	208	48 projects (pjs) in 2005, 67(pjs) in 2006, 90(pjs) in 2007, 3(pjs) in 2008, in total 208 projects.
No. of trained personnel who can test PV equipment	10	10	10 out of 11 participants were able to complete the testing training for PV module, charge controller & inverter

7.3 Social Preparation

(1) Current Status of C/Ps and Other Target Groups

- Through repeated activities, such as social preparation workshops and consultation meetings in barangays, the C/Ps became confident of explaining and answering questions regarding the necessity of the BAPA, roles of the BAPA, and responsibilities of BAPA officials. Therefore, they are now capable of conducting social preparation for RE rural electrification projects.
- During the monitoring of existing BAPA, the Team observed that there was no regular pattern to bookkeeping, so the C/Ps proposed creating and delivering a standard format to BAPA.
- The C/Ps understand the basis of the electric tariff setting and are capable of explaining it to the beneficiaries.
- The C/Ps understand the basic system of micro-hydro and BCS and are capable of responding to questions raised from the beneficiaries.,
- The C/Ps think it is necessary to disseminate the knowledge and experience they have gained from the OJT to ANEC and LGU.

(2) Achievement Indicators

1) Number of activated BAPA:

Ten sites of pilot and rehabilitation projects have been activated by the BAPA so far. Also, BAPA organization/formulation was carried out at five (5) sites with funds received from Japanese grant aid projects

2) Number of BAPA organization activities which are conducted by trained personnel alone:

The C/Ps developed the capability to conduct BAPA organization independently. The number of BAPA organization conducted by the C/Ps alone is eight (8) as of 2008.

	Target	Achieved	Explanation
No. of activated BAPA	15	10	1 pilot MHP project, 9 rehab projects (2 PV and 7 MHP). Addition to these 10 BAPAs, at 5 MHP project sites at northern Luzon, BAPA formulation was done. However, renewable energy projects at these 5 sites were not realized. So BAPA at these 5 sites cannot operate.
No. of BAPA organization activities which are conducted by trained personnel alone	8	8	Now the C/Ps can conduct BAPA organization independently.

7.4 Policy and Procedure of RE based rural electrification

(1) Current Status of C/Ps and Other Target Groups

- The reviewed MOA has been used for BEP projects and rehabilitation projects.
- Since the "Project Implementation and Monitoring Manual" and "Monitoring and Management Guideline" were just recently prepared, they have not been fully utilized yet.

⑵ Achievement Indicators

1) Number of projects in which the standard MOA and reviewed procedures are applied:

The standardized/reviewed MOA has been used for nine rehabilitation projects and a pilot project. As for BEP projects, the MOA has been used for three (3) projects on the 2006 budget and 45 projects on the 2007 budget.

2) Number of monitoring data collected under the reviewed monitoring framework:

The monitoring framework was reviewed and "Guideline for Monitoring and Management of Renewable Energy Projects for Rural Electrification" was prepared and distributed to ANECs. DOE has requested ANECs to submit monitoring data to the DOE. At present, the data of 485 projects has been collected so far.

3) Number of PV projects in which implementers are selected based on the pre-qualification criteria:

The pre-qualification criteria were already incorporated into the Terms of Reference (TOR) for procurement of implementers for the BEP project. Though there are no projects at the this moment, for which procurement was made using the TOR, 45 PV projects that were contracted out to PNOC require full compliance with the PQ as specified in the corresponding TOR.

	Target	Achieved	Explanation
No. of projects in which the standard MOA and reviewed procedures are applied	20	58	9 rehab projects, 1 pilot project, 3 PV projects using 2006 BEP Funds & 45 PV projects using 2007 BEP Funds
No. of monitoring data collected under the reviewed monitoring framework	300	485	330 for PV, 155 for MHP (data collected were from 5 ANECs out of 21 ANECs)
No. of PV projects in which implementers are selected based on the pre-qualification (PQ) criteria	10	0	No. of PV projects is "0". But, 45 PV projects that were contracted out to PNOC require full compliance with the PQ as specified in the corresponding Terms of Reference.

8 Conclusion and Recommendations

8.1 Conclusion

The Project Team conducted various activities by trial and error for five years from June 2004 to June 2009. What we consistently conducted was to provide technical transfer with practice or exercise. OJT or hands-on training was main strategy of the technical transfer. The pilot project and rehabilitation projects were also means to provide C/Ps with practice fields as well as the best field for OJT. During the technical training, we employed hands-on for trainee to exercise. Aside from the training, we prepared materials and framework for C/Ps to stand up for themselves in promoting sustainable RE-based electrification projects.

Accomplishments of this Project are summarized as follows:

- Successful technical transfer to C/Ps and target groups
- Preparation of manuals and guidelines for sustainable RE projects;
- Preparation of educational and promotional materials
- Re-establishment of monitoring framework

8.2 Recommendations

As recommended by the Project Terminal Evaluation Team of JICA, the followings are recommended in order to maximize the outcome of this Project so that sustainable RE-based electrification projects will be promoted:

1) Provide the trained human resources with opportunities to continue working for RE development

A strategic action to make the transferred technologies grow is necessary. Technical knowledge and skills are stored in humans, which is an asset of the Philippines now. However, it will be easily lost or outdated if no attention is paid to disseminating and applying the acquired knowledge and skills. Once the technical base is lost, it would be very difficult to rebuild. DOE is recommended to work out a program to continuously provide job opportunities, or projects, to the trained personnel in the target group, so they are encouraged to work for electrification projects and to brush up their skills. Thus, the technological base of the Philippines will be strengthened and rural electrification projects will go smoothly.

2) Continue technology dissemination activities to local developers and technicians

There is a movement that some agencies have started providing PV training to local

technicians. Under this Project, we prepared PV training module, and MHP training manuals were prepared. So, it is recommended to continue technology dissemination activities to local stakeholders.
As for RE equipment, it is also recommended to continue technology improvement and dissemination to the extent that good quality products are manufactured locally by domestic developers or manufacturers and continuous job opportunities are created.

3) Secure funds for monitoring and rehabilitation of off-grid RE systems

Since the REMB is mandated to develop and utilize renewable energy resources, necessary funds for the monitoring and rehabilitation of BEP projects need to be secured.

4) Fully utilize the deliverables

Under this Project, the deliverables such as manuals, guidelines and educational/promotional materials were prepared. If all stakeholders implement and manage RE project according the manuals and guidelines, sustainability of RE systems is secured. So, it is recommended to fully utilize the deliverables for RE-based electrification projects.

5) Strengthen the monitoring framework

The monitoring framework for RE systems has been just established. DOE is now aware of importance of monitoring for sustainable operation of RE systems. So, it is recommended to make the monitoring framework functioning, and to upgrade the framework for easy and effective monitoring activities.

8.3 Lessons Learned

Lessons learned during the five-year-implementation of the Project are as follows:

1) Importance of opportunities to exercise technology

In the course of this Project implementation, we tried to provide technical transfer to the C/Ps and target groups, and then we found that providing opportunities to exercise or utilize the technology transferred is an effective way. The combination between lectures and exercise is important for technical transfer. In this connection, implementation of a pilot project and rehabilitation projects was helpful to settle the transferred technology.

2) Different approaches for technical transfer by technology fields

For micro-hydro and solar power projects, the strategy for technology transfer should be anchored on the reality that solar power is relatively an easier technology and

prospective sites are in large numbers, therefore trainings should be able to target many local technicians. On the other hand, micro-hydro technology requires professional engineers and prospective sites are limited, therefore trainings should be contented with limited targets.

Appendix

Project Design Matrix (Modified)

Ver. 4.0 (as of March 11, 2008)

Project Title: Sustainability Improvement of Renewable Energy Development in Village Electrification in the Philippines Project Period: June 2004 – May 2009
Project Site: Selected Pilot Project Sites Target Group: DOE-REMD/VFO/MFO, ANECs, LGUs, NGOs and CeMTRE Implementing Agency: Department of Energy (DOE)

Narrative Summary	Indicators/ Targets	Means of Verification	Important Assumption
(Overall Goals) ➢ Village Electrification Program under Expanded Rural Electrification Program is successfully implemented.	➢ 100% barangay level electrification is accomplished by year 2009. ➢ 90% household level electrification is accomplished by year 2017.	➢ DOE/NEA Report	
(Project Purpose) ➢ Capacity of the target group (DOE-REMD, ANECs, LGUs, NGOs and CeMTRE) is enhanced to promote and manage sustainable RE based village electrification projects.	➢ 80% of RE systems developed under this Project and BEP during the Project period are operational appropriately. ➢ In case of trouble, 80% of troubled RE systems mentioned above are repaired or rehabilitated.	➢ Project Performance Evaluation Report ➢ Project Completion Report	➢ RE for rural electrification remains a priority of the government ➢ Other components of ER program is successfully implemented.
(Outputs) 1. Knowledge and skills on MHP technology are enhanced and transferred.	1-1) Number of personnel who can carry out planning of MHP projects: **(6)** 1-2) Number of projects, which are planned, and implemented by trained personnel; **(8)** 1-3) Number of trained personnel who can do or supervise fabrication of water turbines: **(8)** 1-4) Number of trained personnel who has increased knowledge though the training and actual fabrication of ELCs: **(12)** 1-5) Number of water turbines, which are fabricated and/or supervised by trained personnel; **(6)** 1-6) Number of ELCs, which are fabricated by trained personnel; **(8)** 1-7) Number of regional CeMTRE: **(3)**	➢ Annual Project Completion Report ➢ Project Summary Report	➢ DOE-REMD appropriately adapts the project outputs into their own program, system, structure and management. ➢ Trained counterparts will continue to work for rural electrification.
2. Knowledge and skills on PV technology are enhanced and transferred.	2-1) Number of qualified trainers/engineers: **(30)** 2-2) Number of training which is conducted by trained personnel alone: **(5)** 2-3) Number of projects, which are planned and implemented by trained personnel: **(200)** 2-4) Number of personnel who can test PV equipment (PV modules, Charge controllers and Inverters): **(10)**		
3. Knowledge and skills on SP are enhanced and transferred.	3-1) Number of activated BAPA: **(15)** 3-2) Number of BAPA organization activities which are conducted by trained personnel alone: **(8)**		
4. Policy and Procedure of RE based rural electrification are set-up. where, MHP: Micro-hydropower PV : Solar Photovoltaic SP : Social Preparation	4-1) Number of projects in which the standard MOA and reviewed procedures are applied:**(20)** 4-2) Number of monitoring data collected under the reviewed monitoring framework:**(300)** 4-3) Number of PV projects in which implementers are selected based on the pre-qualification criteria: **(10)**		

(Activities)

1-1 Conduct OJTs at potential and existing sites on site survey, inspection, monitoring and technical advices for O&M;
1-2 Implement a model project and rehabilitation projects;
1-3 Conduct technical training on site survey, planning and designing, ELC fabrication and water turbine manufacturing etc.;
1-4 Hold workshops/seminars;
1-5 Conduct mini-lectures at DOE;
1-6 Prepare manuals and guidelines as listed;
1-7 Prepare water turbine design software and its manuals through capacity enhancement of CeMTRE;
1-8 Expand CeMTRE's functions to selected ANECs and others;

2-1 Conduct OJTs at potential and existing sites on site survey, inspection, monitoring and technical advices for O&M;
2-2 Implement rehabilitation projects;
2-3 Conduct PV technical training;
2-4 Conduct mini-lectures at DOE;
2-5 Prepare manuals and guidelines as listed;
2-6 Prepare standard technical specification for bidding;

3-1 Conduct OJTs on social survey at a model project site and other existing project sites;
3-2 Conduct BAPA organization at a model project site and re-organization at existing project sites;
3-3 Hold workshops/seminars on SP and BAPA organization;
3-4 Conduct mini-lectures at DOE;
3-5 Prepare manuals and guidelines for SP;
3-6 Prepare promotion and education materials such as Video;

4-1 Review implementation framework and procedures of RE-based rural electrification projects, including review of budget, roles of stakeholders;
4-2 Prepare standard MOA and implementation guideline for DOE-funded RE project;
4-3 Review monitoring framework and develop a monitoring database for RE based rural electrification project;
4-5 Prepare criteria for pre-qualification/accreditation of suppliers/implementers for DOE-funded RE project;

(Inputs)

·Japanese side:

A Personnel
B Trainings in the Philippines, Japan and other countries
C Provision of Necessary Equipment and plant
D Operating Expenses

·Philippine side:

A Personnel
B Office Space with furniture and utility services
C Travel expenses for field activities
D Expenses for training

Guidelines and Manuals

- MHP
  - Guideline for Selection of Micro-hydropower Potential Sites and Rehabilitation Sites
  - Micro-hydropower Project Evaluation Guideline
  - Manual/guideline for Design, Implementation and Management for Micro-hydropower
  - Micro-hydropower Training Manual
  - Site Completion Test Manual for Micro-hydropower Project
  - Operator Training Manual for Micro-hydropower
- PV
  - PV Project Evaluation Guideline
  - PV Training Manual
  - Manual / Guideline for Design, Implementation and Management for PV system
  - Solar PV User Training Manual
  - Solar PV User Training Guide / Pamphlet
- Others
  - BAPA Formulation and BAPA Management Guideline
  - Guideline for Monitoring and Monitoring Management
  - Project Implementation Manual for DOE-funded RE-based RE Projects

(Pre-conditions)

- DOE/JICA appropriately provides institutional and financial assistance to the related stakeholders.

PROJECT DESIGN MATRIX

Project Title: Sustainability Improvement of Renewable Energy Development in Village Electrification in the Philippines. Project Period: June 2004– May 2009
Project Site: Nationwide Target Group: Officials of DOE and ANECs Implementing Agency: Department of Energy (DOE)

Narrative Summary	Indicators/ Targets	Means of Verification	Important Assumptions
(Overall Goal) Household level electrification rate is increased.	・90% of households are electrified by year 2017	DOE /NEA report	
(Project Purpose) Capability of DOE, ANECs is enhanced to improve sustainability of Renewable Energy Projects in village electrification.	・Number of RE systems operating properly.	・ER Program Report by DOE ・Monitoring report by EUMB	a. The present government policy on rural electrification will be sustained. b. Necessary budget will be allocated.
(Outputs) 1. Well organized social preparation is leaded by DOE and ANECs for sustainable RE development. 2. DOE's and ANECs' technical services from project identification to monitoring and evaluation are enhanced for sustainable RE development. 3. Capabilities in local manufacturing and installation are strengthened through testing application and standardization.	・Number of well organized comunities ・Degree and quality of DOE and ANECs popularity among community. ・Number of sustainable projects implemented. ・Number of projects in operation. ・Number of certified RE equipment localy produced. ・Number of accredited local fabricators and installers of RE equipment..	・Monitoring report ・Tariff collection rate ・Interview and survey ・Monitoring report ・Evaluation report ・Record on RE equipment localy fabricated and installed. ・Published list of accredited fabricators and installers.	a. Trained counterparts will continue to work for rural electrification b. DOE/ANECs provide institutional and financial assistance to the stakeholders concerned.. c. National Government will allocate necessary funds .
(Activities) 1-1. Monitoring and evaluation of energized barangays using RE systems. 1-2. Preparation of manuals. 1-3. Training of stakeholders. 1-4. Social preparation (community organization and institutional development and other activities) 2-1. Monitoring and evaluation of energized barangays using RE systems 2-2. Preparation of manuals. 2-3. Training of stakeholders. 2-4. Supervision and administration of project implementation. 3-1. Monitoring and evaluation of energized barangays using RE systems. 3-2. Monitoring and evaluation of capabilities of local fabricators and installers. 3-3. Formulation of micro-hydro technology standards. 3-4. Implementation of RE technology standards. 3-5. Evaluation of existing accreditation and certification activities for RE technology.	(Inputs) <u>JAPAN</u> A. Personnel a) Long-term Experts b) Short-term Experts B. Training in the Philippines and other countries. C. Provision of Necessary Equipmet D.. Operating Expenses.	<u>THE PHILIPPINES</u> A. Personnel B. Office Space with Furnitures and utility services C. Travel expenses for site visits D. Expenses for training.	a. Trained C/P will not leave DOE/ANECs during the duration of the Project (Pre-conditions) ・DOE's comittment to attain 90% of households electrified by 2017

Project Design Matrix (Original)

Rev. 2.0 (as of March 10, 2005)

Project Title: Sustainability Improvement of Renewable Energy Development in Village Electrification in the Philippines Project Period: June 2004 – May 2009
Project Site: Nationwide Target Group: Officials of DOE, ANECs, LGUs, and NGOs Implementing Agency: Department of Energy (DOE)

Narrative Summary	Indicators/ Targets	Means of Verification	Important Assumption
(Overall Goals) Household level electrification rate is increased. Schemes to ensure sustainability is established.	➢ 90% of households are electrified by year 2017.	➢ DOE/NEA Report	
(Project Purpose) Capacity of DOE, ANECs LGUs and NGOs are enhanced to prepare sustainable Renewable Energy based village electrification projects.	➢ DOE, ANECs can evaluate and judge sustainability of proposed projects. ➢ NGOs can prepare sustainable RE based project. ➢ Number of abandoned RE system are decreased.	➢ Evaluation Report by DOE on donor driven project. ➢ Monitoring report by EUMB.	a The present government policy on rural electrification will be sustained. b Necessary budget will be allocated. c Other related agencies will also electrify smoothly.
(Outputs) 1) Failure prevention system are established. 2) Support system for problem -solving are established.	1-1) Necessary guidelines are prepared. 1-2) Increase of trained participants 1-3) Increase of qualified trainers 1-4) Failure rate of RE system is decreased. 2-1) Technical support system is established. 2-2) Financial support system is established. 2-3) Supervisory system of BAPA is established.	1-1) Number of Guidelines 1-2) Number of trained participants 1-3) Number of qualified trainers 1-4) Monitoring report 2-1) Failed RE systems are rehabilitated. 2-2) Monitoring report 2-3) Policy of support system	a Trained counterparts will continue to work for rural electrification. b DOE provides institutional and financial assistance to the stakeholders concerned. c National government will allocate necessary funds.
(Activities) 1-1 Technical training for installation, operation and maintenance using prepared technical training manuals 1-2 User training for operation and maintenance using prepared user training manuals 1-3 Preparation of guidelines (project evaluation, system designing, installation, operation and maintenance, etc.) 1-4 Preparation of standard technical specifications for bidding 1-5 Preparation of failure preventive monitoring method 1-6 Monitoring and evaluation of energized barangays using RE systems 1-7 Evaluation of components and preparation of quality certificate system 1-8 Training on RE components manufacturing 2-1 Preparation of mechanism for problem-solving system (Brgy → LGU → DOE) 2-2 Preparation of guidelines for proactive problem-solving system 2-3 Preparation of manuals for establishment and operation of BAPA 2-4 Social awareness in renewable energy system 2-5 Social preparation (community organization and institutional development and other activities) 2-6 Technical assistance to CeMTRE	**(Inputs)** ·Japanese side: A Personnel B Trainings in the Philippines and other countries C Provision of Necessary Equipment D Operating Expenses	·Philippine side: A Personnel B Office Space with furniture and utility services C Travel expenses for site visits D Expenses for training	a Trained C/P will not leave DOE/ANECs during the Project

Project Design Matrix (Modified)

Ver. 3.0 (as of February 21, 2007)

Project Title: Sustainability Improvement of Renewable Energy Development in Village Electrification in the Philippines Project Period: June 2004 – May 2009
Project Site: Selected Pilot Project Sites Target Group: DOE-REMD/VFO/MFO, ANECs, LGUs, NGOs and CeMTRE Implementing Agency: Department of Energy (DOE)

Narrative Summary	Indicators/ Targets	Means of Verification	Important Assumption
(Overall Goals) ➢ Village Electrification Program under Expanded Rural Electrification Program is successfully implemented.	➢ 100% barangay level electrification is accomplished by year 2008. ➢ 90% household level electrification is accomplished by year 2017.	➢ DOE/NEA Report	
(Project Purpose) ➢ Capacity of the target group (DOE-REMD, ANECs, LGUs, NGOs and CeMTRE) is enhanced to promote and manage sustainable RE based village electrification projects.	➢ Overall performance of the existing RE system is expanded. ➢ Number of sustainable RE system increase.	➢ Project Performance Evaluation Report ➢ Annual Project Completion Report	➢ RE for rural electrification remains a priority of the government
(Outputs) 1. BEP and rehabilitation program are improved. 2. Necessary knowledge and skills for RE schemes are transferred. 3. Monitoring system and database for RE projects is established. 4. Accreditation and certification system is established in collaboration with CBRED Project. 5. Practical and technical requirements of micro-hydro equipment are prepared at CeMTRE.	1-1) Number of rehabilitated projects 1-2) Number of newly implemented projects 2-1) Number of trained person 2-2) Number of qualified trainer 2-3) Guidelines and manuals 3-1) Established database and effective monitoring system 4-1) Accreditation and certification system 4-2) Number of accredited person 4-3) Number of certified equipment 5-1) Number of skilled technician for micro-hydro turbine and ELC 5-2) Qualified design of micro-hydro turbine and ELC	➢ Project Performance Evaluation Report ➢ Annual Project Completion Report	➢ DOE-REMD appropriately adapts the project outputs into their own program, system, structure and management.
(Activities) 1 Review of the existing program (Procedure, structure, budget etc.) 2 Implementation of pilot projects 2-1 micro-hydropower rehabilitation projects 2-2 micro-hydropower projects 2-3 PV projects under BEP 3 Training program on social preparation, institution development and RE development 3-1 OJTs at pilot project sites 3-2 Lectures 3-3 Technical Trainings 3-4 Workshops 4 Renewal of Monitoring system 4-1 Review of current monitoring system 4-2 Renewal of database for RE project 5 Preparation of Guidelines and manuals 5-1 Preparation of necessary guidelines and manuals 5-2 Preparation of standard technical specifications for bidding 6 Establishment of Solar PV accreditation and certification system	**(Inputs)** ·Japanese side: A Personnel B Trainings in the Philippines, Japan and other countries C Provision of Necessary Equipment and plant D Operating Expenses ·Philippine side: A Personnel B Office Space with furniture and utility services C Travel expenses for field activities D Expenses for training		**(Pre-conditions)** ➢ Trained counterparts will continue to work for rural electrification. ➢ DOE/JICA appropriately provides institutional and financial assistance to the related stakeholders.

Expert Dispatch Records

Field	Expert	2004	2005	2006	2007	2008	2009
		5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7
Rural Electrification Policy	Jun Tamakawa						
Social Preparation	Kuri Orui						
	Akira Sudo						
	Nobuki Hayashi						
Micro-Hydropower Technology	Yuich Sano						
	Mitsuru Shimizu						
Micro-Hydropower System (Electro-Mechanical, Turbine)	Yukio Adachi						
	Yoshinori Yamashita						
	Takayuki Abe						
	Hirotaka Watanabe						
	Yoshikazu Ishii						
	Sadahiro Shindo						
Micro-Hydropower Control System	Yoshikazu Ishii						
	Keisuke Kumihashi						
Solar PV Technology	Akio Shiota						
	Shigenori Matsumura						
	Koichi Iwabu						
PV Power Generation (Centralized System)	Masahiro Kaimoto						
	Fumikazu Doi						
	Shigehiko Hayashi						
Coordination	Fumiko Osada						
	Keiichi Fujitani						

Expert Dispatch Record (1/2)

Field of Expertise	Expert	Dispatched Period
Rural Electrification Policy	Jun TAMAKAWA	Apr 9 – May 4, 2006
		Aug 28 – Sep 6, 2006
		Oct 11 – Oct 28, 2006
		Dec 3 – Dec 16, 2006
		Jan 16 – Mar 8, 2007
		May 28 – Jun 26, 2007
		Aug 15 – Sep 15, 2007
		Oct 22 – Nov 24,2007
		Jan 28 – Feb 29, 2008
		Mar 5 – Mar 12, 2008
		May 19 – Jun 7, 2008
		Aug 11 – Aug 29, 2008
		Sep 22 – Oct 1, 2008
		Dec 4 – Dec 20, 2008
		Jan 26 – Feb 20, 2009
		May 10 – May 30,2009
		Jun 20 – Jun 30, 2009
		Jul 22 – Jul 25, 2009
Social Preparation	Kuri ORUI	Mar 21, 2005 – Mar 20, 2007
	Akira SUDO	Feb 15 – Mar 13, 2005
		Sep 25 – Nov 4, 2005
	Nobuki HAYASHI	Oct 8 – Oct 28, 2006
		Nov 26 – Dec 16, 2006
		Jan 7 – Feb 11, 2007
		Jun 10 – Jul 7, 2007
		Sep 2 – Sep 14, 2007
		Oct 22 – Nov 20, 2007
		Jan 7 – Feb 1, 2008
		May 19 – June 13, 2008
		Aug 18 – Sep 12, 2008
		Oct 27 – Nov 21, 2008
		Jan 12 – Feb 6, 2009
		May 10 – May 23, 2009
		Jun 17 – Jun 30, 2009
Micro Hydropower Technology	Yuichi SANO	Jun 9 – Nov 27, 2004
		Jan 9 – May 15, 2005
		Jun 26 – Nov 26, 2005
		Jan 8 – Jun 16, 2006
	Mitsuru SHIMIZU	Oct 8 – Oct 28, 2006
		Nov 26 – Dec 16, 2006
		Jan 3 – Feb 7, 2007
		Jun 10 – Jul 7, 2007
		Sep 2 – Sep 15, 2007
		Oct 28 – Nov 24, 2007
		Jan 7 – Feb 1, 2008
		May 19 – May 31, 2008
		Jul 6 – Jul 19, 2008
		Aug 18 – Sep 12, 2008
		Oct 27 – Nov 21, 2008
		Jan 12 – Jan 30, 2009
		May 10 – May 19, 2009
		Jun 17 – Jun 30, 2009
Micro Hydropower System (Electro-Mechanical, Turbine)	Yukio ADACHI	Feb 2 – Mar 13, 2005
	Yoshinori YAMASHITA	Oct 19 – Oct 30, 2005
	Takayuki ABE	Mar 9 – Mar 22, 2006
	Hirotaka WATANABE	Oct 8 – Nov 14, 2006
		Jan 7 – Mar 8, 2007
		Jun 14 – Jul 7, 2007

Expert Dispatch Record (2/2)

Field of Expertise	Expert	Dispatched Period
Micro Hydropower System (Electro-Mechanical, Turbine)	Yoshikazu ISHII	Aug 20 – Sep 8, 2007
		Oct 28 – Nov 16, 2007
		Dec 8 – Dec 21, 2007
		Feb 4 – Feb 29, 2008
		May 10 – May 23, 2009
	Sadahiro SHINDO	Jun 1 – Jun 14, 2008
	Yoshikazu ISHII	Aug 11 – Oct 1, 2008
	Sadahiro SHINDO	Dec 7 – Dec 20, 2008
Micro Hydropower Control System	Yoshikazu ISHII	Oct 27 – Nov 30, 2005
		Mar 9 – Mar 22, 2006
	Keisuke KUMIHASHI	Nov 27 – Dec 16, 2006
		Jan 7 – Feb 25, 2007
		Aug 15 – Sep 8, 2007
		Oct 28 – Nov 10, 2007
		Feb 12 – Mar 8, 2008
		May 19 – Jun 14, 2008
		Jul 15 – Aug 13, 2008
		Dec 1 – Dec 13, 2008
		Jan 19 – Feb 6, 2009
		May 10 – May 23, 2009
Solar Photovoltaic Technology	Akio SHIOTA	Jun 9 – Nov 27, 2004
		Jan 9 – May 15, 2005
		Jun 26 – Nov 26, 2005
		Jan 8 – Jun 16, 2006
	Shigenori MATSUMURA	Aug 28 – Dec 16, 2006
		Jan 16 – Feb 17, 2007
	Koichi IWABU	May 28 – Jul 20, 2007
		Oct 1 – Nov 24, 2007
		Jan 14 – Feb 29, 2008
		May 21 – Jun 28, 2008
		Aug 18 – Sep 20, 2008
		Oct 20 – Nov 28, 2008
		Jan 19 – Feb 20, 2009
		May 10 – May 30, 2009
		Jun 17 – Jun 30, 2009
Photovoltaic Power Generation Technology (Centralized System)	Masahiro KAIMOTO	Feb 15 – Mar 13, 2005
		Sep 25 – Oct 11, 2005
		Feb 9 – Feb 24, 2006
	Fumikazu Doi	Oct 24 – Dec 16, 2006
		Jan 29 – Mar 3, 2007
		May 28 – Jul 4, 2007
		Oct 1 – Nov 16, 2007
		Jun 2 – Jun 14, 2008
		Oct 8 – Nov 7, 2008
		Jun 17 – Jun 30, 2009
	Shigehiko HAYASHI	Jun 16 – Jun 27, 2008
		Aug 25 – Sep 12, 2008
	Fumikazu Doi	Jan 13 – Feb 11, 2009
Coordination	Fumiko OSADA	May 28 – Jun 9, 2007
		Aug 26 – Sep 8, 2007
		Nov 14 – Nov 24, 2007
		Feb 17 – Feb 29, 2008
	Keiichi FUJITANI	Jun 2 – Jun 13, 2008
		Sep 1 – Sep 12, 2008
		Nov 17 – Nov 28, 2008
		Feb 2 – Feb 13, 2009

Equipment Administration for the Survey/Expert/Volunteer/Others

Project/Expert/Volunteer /Others Name		Philippine: Rural Electrification Project SANO Yuichi / SHIOTA Akio				Project No.	No. 012-1419-E-0 T-0121419				Budget Subject	(Sub)Exp. for Technical Cooperation Project		
Counterpart Organization		Department of Energy (DOE)				Department/Section/office in Charge					JICA Philippine Office			
Dispatching/Cooperation Period		/05/2004 ～ /06/2009				Consultant Name								
Date of Registration in JICA Office D/M/Y	Description/Name of Equipment /Goods	Specification・Standard	QTY	Yen /Peso） Unit Price	Provider	User	Condition after Cooperation of Survey/Technical transfer				Transfer / Return Date D/M/Y	Receiver	Receipt Date D/M/Y	Reference
							Transfer	Return	Others	Approval Document No., Date(D/M/Y)				
30/Jun/04	Transformer	1KVA (AVR MEIJI)	1	¥ 20,000	Former JICA Exnert	DOE	O							
30/Jun/04	Copy Machine	MINOLTA, CSPRO230	1	¥	Former JICA Exnert	DOE	O							
27/Jul/04	Note Personnel Computer	TOSHIBA Dynabook VX-1/2W15LDSW Optical Mouse	1	¥ 250,000	Mr. Sano	DOE	O		+ Handle Compact Keyboard (P505) USB PS2					
27/Jul/04	Desktop Computer	EPSON, Endever Pro2500	1	¥ 350,000	Donated	DOE	O			RVS				
27/Jul/04	Digital Camera	CASIO QV-R51, SD Card 64M, USB2.0 SDCard Reader	1	¥ 40,000		DOE	O			DOE-MFO		1100450		
27/Jul/04	Digital Camera	FUJI FX-F710, XDCard512M, USB2.0 XDCard Reader	1	¥ 60,000		DOE	O			DOE-VFO		4212599		
27/Jul/04	Scanner	Canon, CanoScan LIDE80	1	¥ 30,000		DOE	O							
27/Jul/04	Portable GPS Legend	Garmin eTrex Legend AP model	1	¥ 45,000		DOE	O			DOE-MFO		79854470		C-1
27/Jul/04	Portable GPS Legend	Garmin eTrex Legend AP model	1	¥ 45,000		DOE	O			DOE-VFO		79854481		C-2
27/Jul/04	Laser Range Finder (Yardage Pro)	Bushnell Light Speed Scout	1	¥ 50,000		DOE	O							
27/Jul/04	Hand Level (Simple Level)	5.0 magnification , w/ Vertical angle device	1	¥ 18,000		DOE	O							1
27/Jul/04	Hand Level (Simple Level)	5.0 magnification , w/ Vertical angle device	1	¥ 18,000		DOE	O							2
27/Jul/04	Hand Level (Simple Level)	5.0 magnification , w/ Vertical angle device	1	¥ 18,000		DOE	O							3
27/Jul/04	Hand Level (Simple Level)	5.0 magnification , w/ Vertical angle device	1	¥ 18,000		DOE	O							4
27/Jul/04	Hand Level (Simple Level)	5.0 magnification , w/ Vertical angle device	1	¥ 18,000		DOE	O							5
27/Jul/04	Clamp AC/Dcmeter	HIOKI 3287	1	¥ 28,000		DOE	O			DOE-VFO		050533805		13
27/Jul/04	Clamp AC/Dcmeter	HIOKI 3287	1	¥ 28,000		DOE	O			DOE-VFO		050533806		14
27/Jul/04	Ultra-sonic distance meter	Custom CK-1	1	¥ 6,000		DOE	O							
27/Jul/04	Illuminance Meter	YOKOGAWA 510 01	1	¥ 45,000		DOE	O							
27/Jul/04	Radiation Thermometer	YOKOGAWA 530 01	1	¥ 36,300		DOE	O							
27/Jul/04	Multi Meter	YOKOGAWA 7533 04	1	¥ 33,000		DOE	O							
06/Jun/05	Clamp Power Meter	Hioki 3286-20	1	P 54,000	EIKO	DOE	O					030319210		3286-1
06/Jun/05	Clamp Power Meter	Hioki 3286-20	1	P 54,000	EIKO	DOE	O					030710715		3286-2
06/Jun/05	Clamp Power Meter	Hioki 3286-20	1	P 54,000	EIKO	DOE	O					0302319211		3286-3
06/Jun/05	Clamp Power Meter	Hioki 3286-20	1	P 54,000	EIKO	DOE	O					030319208		3286-4
06/Jun/05	Clamp Power Meter	Hioki 3286-20	1	P 54,000	EIKO	DOE	O					030319212		3286-5
06/Jun/05	Mega Ohm Tester	Hioki 3454-11	1	P 13,000	EIKO	DOE	O					020710710		3454-1
06/Jun/05	Mega Ohm Tester	Hioki 3454-11	1	P 13,000	EIKO	DOE	O			DOE-MFO		02071011		3454-2
06/Jun/05	Mega Ohm Tester	Hioki 3454-11	1	P 13,000	EIKO	DOE	O					020710709		3454-3
06/Jun/05	Mega Ohm Tester	Hioki 3454-11	1	P 13,000	EIKO	DOE	O							3454-4
06/Jun/05	Mega Ohm Tester	Hioki 3454-11	1	P 13,000	EIKO	DOE	O			DOE-VFO		020504432		3454-5
06/Jun/05	Power Meter	Kyoritsu 6300	1	P 118,200	EIKO	DOE	O			DOE-VFO		8021091		K6300-1
06/Jun/05	Power Meter	Kyoritsu 6300	1	P 118,200	EIKO	DOE	O	*Installed at CPU-ANEC*				8018191		K6300-2
06/Jun/05	Power Meter	Kyoritsu 6300	1	P 118,200	EIKO	DOE	O	*no battery*				8019018		K6300-3
06/Jun/05	Power Meter	Kyoritsu 6300	1	P 118,200	EIKO	DOE	O	*Knob reverse*				8021089		K6300-4
06/Jun/05	Power Meter	Kyoritsu 6300	1	P 118,200	EIKO	DOE	O					8018188		K6300-5
06/Jun/05	Power Meter	Kyoritsu 6300	1	P 118,200	EIKO	DOE	O							K6300-6
06/Jun/05	Clamp AC/DCmeter	HIOKI 3287	1	P 20,500	EIKO	DOE	O					050533820		H3287-1
06/Jun/05	Clamp AC/DCmeter	HIOKI 3287	1	P 20,500	EIKO	DOE	O					040514479		H3287-2
06/Jun/05	Clamp AC/DCmeter	HIOKI 3287	1	P 20,500	EIKO	DOE	O					040514499		H3287-3
06/Jun/05	Clamp AC/DCmeter	HIOKI 3287	1	P 20,500	EIKO	DOE	O	*Installed at VSU-ANEC*				050533817		H3287-4
06/Jun/05	Clamp AC/DCmeter	HIOKI 3287	1	P 20,500	EIKO	DOE	O					050533819		H3287-5
06/Jun/05	Clamp AC/DCmeter	HIOKI 3287	1	P 20,500	EIKO	DOE	O					050533809		H3287-6
06/Jun/05	Clamp AC/DCmeter	HIOKI 3287	1	P 20,500	EIKO	DOE	O					050533813		H3287-7
06/Jun/05	Clamp AC/DCmeter	HIOKI 3287	1	P 20,500	EIKO	DOE	O					050533814		H3287-8
06/Jun/05	Clamp AC/DCmeter	HIOKI 3287	1	P 20,500	EIKO	DOE	O					050533816		H3287-9
06/Jun/05	Clamp AC/DCmeter	HIOKI 3287	1	P 20,500	EIKO	DOE	O			DOE-MFO		050533815		H3287-10
06/Jun/05	Clamp AC/DCmeter	HIOKI 3287	1	P 20,500	EIKO	DOE	O	*Installed at VSU-ANEC*				050533812		H3287-11
06/Jun/05	Clamp AC/DCmeter	HIOKI 3287	1	P 20,500	EIKO	DOE	O			DOE-MFO		050533818		H3287-12
06/Jun/05	Digital Multi Meter	Hioki 3801-01	1	P 27,500	EIKO	DOE	O					041201048		H3801-1
06/Jun/05	Digital Multi Meter	Hioki 3801-01	1	P 27,500	EIKO	DOE	O					041201031		H3801-2
06/Jun/05	Digital Multi Meter	Hioki 3801-01	1	P 27,500	EIKO	DOE	O					041200449		H3801-3
06/Jun/05	Digital Multi Meter	Hioki 3801-01	1	P 27,500	EIKO	DOE	O					041201047		H3801-4
06/Jun/05	Digital Multi Meter	Hioki 3801-01	1	P 27,500	EIKO	DOE	O					041201045		H3801-5
06/Jun/05	Digital Multi Meter	Hioki 3801-01	1	P 27,500	EIKO	DOE	O					041201038		H3801-6
06/Jun/05	Digital Multi Meter	Hioki 3801-01	1	P 27,500	EIKO	DOE	O					04120141		H3801-7
06/Jun/05	Emission Thermometer	Custom CT2000D	1	P 9,400	EIKO	DOE	O			DOE-MFO				
06/Jun/05	Emission Thermometer	Custom CT2000D	1	P 9,400	EIKO	DOE	O							CT2000D-1

06/Jun/05	Emission Thermometer	Custom CT2000D	1	P	9,400	EIKO	DOE	O							CT2000D-3
06/Jun/05	Emission Thermometer	Custom CT2000D	1	P	9,400	EIKO	DOE	O							CT2000D-4
06/Jun/05	Emission Thermometer	Custom CT2000D	1	P	9,400	EIKO	DOE	O							CT2000D-5
06/Jun/05	Solar Sensor	Yokogawa H-205	1	P	60,500	EIKO	DOE	O					1043		YH205-1
06/Jun/05	Solar Sensor	Yokogawa H-205	1	P	60,500	EIKO	DOE	O					1047		YH205-2
06/Jun/05	Solar Sensor	Yokogawa H-205	1	P	60,500	EIKO	DOE	O					1046		YH205-3
06/Jun/05	Solar Sensor	Yokogawa H-205	1	P	60,500	EIKO	DOE	O					1048		YH205-4
06/Jun/05	Solar Sensor	Yokogawa H-205	1	P	60,500	EIKO	DOE	O					1045		YH205-5
06/Jun/05	DC Power Supply	Kikusui PWR400L	1	P	132,200	EIKO	DOE	O							
06/Jun/05	DC Power Supply	Kikusui PWR400L	1	P	132,200	EIKO	DOE	O							
06/Jun/05	DC Power Supply	Kikusui PWR400L	1	P	132,200	EIKO	DOE	O							
06/Jun/05	Portable GPS	Garmin eTrex Legend C, AP model Color display w/carrying case	1	P	47,400	EIKO	DOE	O							
06/Jun/05	Portable GPS	Garmin eTrex Legend C, AP model Color display w/carrying case	1	P	47,400	EIKO	DOE	O					77851510		
06/Jun/05	Portable GPS	Garmin eTrex Legend C, AP model Color display w/carrying case	1	P	47,400	EIKO	DOE	O					77816030		
06/Jun/05	Portable GPS	Garmin eTrex Legend C, AP model Color display w/carrying case	1	P	47,400	EIKO	DOE	O					77851513		
06/Jun/05	Portable GPS	Garmin eTrex Legend C, AP model Color display w/carrying case	1	P	47,400	EIKO	DOE	O					77851492		
06/Jun/05	Potable Oscilloscope	Fluke 123S	1	P	120,600	EIKO	DOE	O							
06/Jun/05	Document Scanner	Fujitsu fi-5110EXOX2	1	P	63,000	EIKO	DOE	O							
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8127 (100A)	1	¥	14,700		DOE	O					00168		K8127-1
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8127 (100A)	1	¥	14,700		DOE	O					00162		K8127-2
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8127 (100A)	1	¥	14,700		DOE	O					00152		K8127-3
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8127 (100A)	1	¥	14,700		DOE	O					00169		K8127-4
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8127 (100A)	1	¥	14,700		DOE	O					00167		K8127-5
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8127 (100A)	1	¥	14,700		DOE	O					00155		K8127-6
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8127 (100A)	1	¥	14,700		DOE	O					00033		K8127-7
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8127 (100A)	1	¥	14,700		DOE	O					00161		K8127-8
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8127 (100A)	1	¥	14,700		DOE	O					00049		K8127-9
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8127 (100A)	1	¥	14,700		DOE	O					00165		K8127-10
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8126 (200A)	1	¥	17,700		DOE	O					00028		K8126-1
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8126 (200A)	1	¥	17,700		DOE	O					00038		K8126-2
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8126 (200A)	1	¥	17,700		DOE	O					00017		K8126-3
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8126 (200A)	1	¥	17,700		DOE	O					00012		K8126-4
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8126 (200A)	1	¥	17,700		DOE	O					00027		K8126-5
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8126 (200A)	1	¥	17,700		DOE	O					00010		K8126-6
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8125 (500A)	1	¥	19,600		DOE	O					01826		K8125-1
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8125 (500A)	1	¥	19,600		DOE	O					01845		K8125-2
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8125 (500A)	1	¥	19,600		DOE	O					01821		K8125-3
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8125 (500A)	1	¥	19,600		DOE	O					01836		K8125-4
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8125 (500A)	1	¥	19,600		DOE	O					01833		K8125-5
06/Sep/05	Clamp Sensor for 6300	Kyoritsu 8125 (500A)	1	¥	19,600		DOE	O					01820		K8125-6
06/Sep/05	Data logger DCV	Hioki 3645-20	1	¥	27,500		DOE	O					050717074		H3645-1
06/Sep/05	Data logger DCV	Hioki 3645-20	1	¥	27,500		DOE	O					050717075		H3645-2
06/Sep/05	Data logger DCV	Hioki 3645-20	1	¥	27,500		DOE	O					050717072		H3645-3
06/Sep/05	Data logger DCV	Hioki 3645-20	1	¥	27,500		DOE	O					050717076		H3645-4
06/Sep/05	Data logger DCV	Hioki 3645-20	1	¥	27,500		DOE	O							H3645-5
06/Sep/05	Data logger DCV	Hioki 3645-20	1	¥	27,500		DOE	O							H3645-6
06/Sep/05	Data logger DCV	Hioki 3645-20	1	¥	27,500		DOE	O							H3645-7
06/Sep/05	Data logger DCV	Hioki 3645-20	1	¥	27,500		DOE	O							H3645-8
06/Sep/05	Data logger DCV	Hioki 3645-20	1	¥	27,500		DOE	O							H3645-9
06/Sep/05	Data logger DCV	Hioki 3645-20	1	¥	27,500		DOE	O							H3645-10
06/Sep/05	Data logger ACV	Hioki 3637-20	1	¥	24,500		DOE	O					050719781		H3637-1
06/Sep/05	Data logger ACV	Hioki 3637-20	1	¥	24,500		DOE	O					050719773		H3637-2
06/Sep/05	Data logger ACV	Hioki 3637-20	1	¥	24,500		DOE	O					050719779		H3637-3
06/Sep/05	Data logger ACV	Hioki 3637-20	1	¥	24,500		DOE	O					050719778		H3637-4
06/Sep/05	Data logger ACV	Hioki 3637-20	1	¥	24,500		DOE	O					050719717		H3637-5
06/Sep/05	Data logger ACV	Hioki 3637-20	1	¥	24,500		DOE	O					050719775		H3637-6
06/Sep/05	Data logger ACV	Hioki 3637-20	1	¥	24,500		DOE	O					050719776		H3637-7
06/Sep/05	Data logger ACV	Hioki 3637-20	1	¥	24,500		DOE	O					050719771		H3637-8
06/Sep/05	Data logger ACV	Hioki 3637-20	1	¥	24,500		DOE	O					050719774		H3637-9
06/Sep/05	Data logger ACV	Hioki 3637-20	1	¥	24,500		DOE	O					050719772		H3637-10
06/Sep/05	Data logger ACA	Hioki 3636-20, w/ two 9650(100A) Sensor	1	¥	44,100		DOE	O					050720195		H3636-1
06/Sep/05	Data logger ACA	Hioki 3636-20, w/ two 9650(100A) Sensor	1	¥	44,100		DOE	O					050720194		H3636-2
06/Sep/05	Data logger ACA	Hioki 3636-20, w/ two 9650(100A) Sensor	1	¥	44,100		DOE	O					050720189		H3636-3

06/Sep/05	Data logger ACA	Hioki 3636-20, w/ two 9650(100A) Sensor	1	¥ 44,100		DOE	O					050770191		H3636-4
06/Sep/05	Data logger ACA	Hioki 3636-20, w/ two 9650(100A) Sensor	1	¥ 44,100		DOE	O					050720188		H3636-5
06/Sep/05	Data logger ACA	Hioki 3636-20, w/ two 9650(100A) Sensor	1	¥ 44,100		DOE	O					050720198		H3636-6
06/Sep/05	Data logger ACA	Hioki 3636-20, w/ two 9650(100A) Sensor	1	¥ 44,100		DOE	O					050720192		H3636-7
06/Sep/05	Data logger ACA	Hioki 3636-20, w/ two 9650(100A) Sensor	1	¥ 44,100		DOE	O					050720190		H3636-8
06/Sep/05	Data logger ACA	Hioki 3636-20, w/ two 9650(100A) Sensor	1	¥ 44,100		DOE	O					050720193		H3636-9
06/Sep/05	Data logger ACA	Hioki 3636-20, w/ two 9650(100A) Sensor	1	¥ 44,100		DOE	O					050720196		H3636-10
06/Sep/05	Communication Base	Hioki 3912-20	1	¥ 29,200		DOE	O					050717066		H3912-1
06/Sep/05	Communication Base	Hioki 3912-20	1	¥ 29,200		DOE	O					050717060		H3912-2
06/Sep/05	Communication Base	Hioki 3912-20	1	¥ 29,200		DOE	O					05071067		H3912-3
06/Sep/05	Solar Sensor	Yokogawa H-205	1	¥ 75,000		DOE	O					1054		YH205-1
06/Sep/05	Solar Sensor	Yokogawa H-205	1	¥ 75,000		DOE	O					1056		YH205-2
06/Sep/05	Solar Sensor	Yokogawa H-205	1	¥ 75,000		DOE	O					1057		YH205-3
06/Sep/05	Solar Sensor	Yokogawa H-205	1	¥ 75,000		DOE	O							YH205-4
06/Sep/05	Solar Sensor	Yokogawa H-205	1	¥ 75,000		DOE	O							YH205-5
06/Sep/05	Multi Meter	HIOKI 3801-01, w/carrying case & crip type lead	1	¥ 46,800		DOE	O					050500713		H3801-8
06/Sep/05	Multi Meter	HIOKI 3801-01, w/carrying case & crip type lead	1	¥ 46,800		DOE	O					050500717		H3801-9
06/Sep/05	Digital , Insulation Tester	HIOKI 3454-11	1	¥ 22,000		DOE	O					050716155		
06/Sep/05	Digital , Insulation Tester	HIOKI 3454-11	1	¥ 22,000		DOE	O					050716147		
06/Sep/05	Portable GPS	Garmin eTrex Legend C, AP model Color display w/carrying case	1	¥ 56,200		DOE	O					77866887		C-6
06/Sep/05	Portable GPS	Garmin eTrex Legend C, AP model Color display w/carrying case	1	¥ 56,200		DOE	O					77865783		C-7
06/Sep/05	Current Meter	KENEK Propeller Current meter, VR-201model T-12A Type	1	¥ 149,700		DOE	O					233047		VR201-1
06/Sep/05	Current Meter	KENEK Propeller Current meter, VR-201model T-12A Type	1	¥ 149,700		DOE	O			DOE-MFO		233045		VR201-2
06/Sep/05	Current Meter	KENEK Propeller Current meter, VR-201model T-12A Type	1	¥ 149,700		DOE	O			DOE-VFO		233046		VR-201-3
06/Sep/05	Laser Range Finder	Bushnell Yardage Pro Scout	1	¥ 58,000		DOE	O			DOE-MFO		02853	Yardage Pro-1	
06/Sep/05	Laser Range Finder	Bushnell Yardage Pro Scout	1	¥ 58,000		DOE	O			DOE-VFO		023850	Yardage Pro-2	
06/Sep/05	Hand Level, (Simple Level)	5.0 magnification , w/ Vertical angle device	1	¥ 17,600		DOE	O							
06/Sep/05	Hand Level, (Simple Level)	5.0 magnification , w/ Vertical angle device	1	¥ 17,600		DOE	O							
06/Sep/05	Aluminum Staff Rod	New SunAlumi SUN-33, 3m（1m storage）	3	¥ 6,500		DOE	O							
06/Sep/05	Digital Planimeter	TAMAYA Degitizing Area-Line Meter, PLANIX EX	1	¥ 169,000		DOE	O			DOE-MFO		010471		Planix-1
06/Sep/05	Digital Planimeter	TAMAYA Degitizing Area-Line Meter, PLANIX EX	1	¥ 169,000		DOE	O			DOE-VFO		010472		Planix-2
06/Sep/05	Pocket Compass , (Simple survey)	USHIKATA model Level Tracon LS-25 with steel tripod	1	¥ 93,800		DOE	O			DOE-MFO		190752		LS25-1
06/Sep/05	Pocket Compass , (Simple survey)	USHIKATA model Level Tracon LS-25 with steel tripod	1	¥ 93,800		DOE	O			DOE-VFO		190696		LS25-2
06/Sep/05	Pocket Compass , (Simple survey)	USHIKATA model Level Tracon LS-25 with steel tripod	1	¥ 93,800		DOE	O					190609		LS25-3
21/Mar/06	Potable, Ultrasonic Flowmeter	TOKIMEC UFP-10 model, Standard sensor （φ50~500mm）	1	P 530,000	SUN EAST ASIA Corporation	DOE	O							
21/Mar/06	Digital, Output receiving software	For TOKIMEC UFP-10 model CD-ROM, D-SUB9 pin	1	P 28,700	SUN EAST ASIA Corporation	DOE	O							
21/Mar/06	fixing rod for current meter	KENEK VR-201model, T-12A type	1	P 21,700	SUN EAST ASIA Corporation	DOE	O							
21/Mar/06	fixing rod for current meter	KENEK VR-201model, T-12A type	1	P 21,700	SUN EAST ASIA Corporation	DOE	O			DOE-MFO				
21/Mar/06	fixing rod for current meter	KENEK VR-201model, T-12A type	1	P 21,700	SUN EAST ASIA Corporation	DOE	O			DOE-VFO				
21/Mar/06	Compass-Glass	HB-3L, 2.2 magnification	1	P 13,800	SUN EAST ASIA Corporation	DOE	O							HB-3L-1
21/Mar/06	Compass-Glass	HB-3L, 2.2 magnification	1	P 13,800	SUN EAST ASIA Corporation	DOE	O			DOE-MFO				HB-3L-2
21/Mar/06	Compass-Glass	HB-3L, 2.2 magnification	1	P 13,800	SUN EAST ASIA Corporation	DOE	O			DOE-VFO				HB-3L-3
21/Mar/06	Compass-Glass	HB-3L, 2.2 magnification	1	P 13,800	SUN EAST ASIA Corporation	DOE	O							HB-3L-4
21/Mar/06	Non-contact digital Tachometer	HIOKI Tacho Hitester 3403	1	P 24,600	SUN EAST ASIA Corporation	DOE	O					060115217		H3403-1
21/Mar/06	Non-contact digital Tachometer	HIOKI Tacho Hitester 3403	1	P 24,600	SUN EAST ASIA Corporation	DOE	O			DOE-VFO		060104415		H3403-2

21/Mar/06	Non-contact digital Tachometer	HIOKI Tacho Hitester 3403	1	P	24,600	SUN EAST ASIA Corporation	DOE	O			DOE-MFO		060104417		H3403-3
24/Mar/06	Multi-Media Projector	EPSON EMP 755	1	P	111,000	Northgate , Technologies, Inc.	DOE	O					6WX6620029F		
24/Mar/06	Replacement Lamp for Multi-Media Projector	V13H010L32 for EPSON EMP 755	1	P	25,300	Northgate , Technologies, Inc.	DOE	O					571121105		
30/Mar/06	Notebook Computer	NEO Q-Note Empriva 38A WX	1	P	106,650	e-Country Enterprises	DOE	O			A4 FORM	MCM	*for repair*		
30/Mar/06	Notebook Computer	NEO Q-Note Empriva 38A WX	1	P	106,650	e-Country Enterprises	DOE	O			A4 FORM	EGG			
30/Mar/06	Desktop Computer	P5RDI-VM Intel 915	1	P	90,000	e-Country Enterprises	DOE	O			A4 FORM	JEC			
30/Mar/06	Desktop Computer	P5RDI-VM Intel 915	1	P	90,000	e-Country Enterprises	DOE	O			A4 FORM	NAF			
30/Mar/06	Desktop Computer	P5RDI-VM Intel 915	1	P	90,000	e-Country Enterprises	DOE	O			A4 FORM	JLM			
30/Mar/06	Printer	Hp Inkjet 2800	1	P	31,200	e-Country Enterprises	DOE	O			A4 FORM				
30/Mar/06	Digital Camera	Canon Ixus 55	1	P	28,700	e-Country Enterprises	DOE	O			A4 FORM	MCM		948305766	
30/Mar/06	Digital Camera	Canon Ixus 55	1	P	28,700	e-Country Enterprises	DOE	O			A4 FORM			1148517448	
30/Mar/06	Digital Camera	Canon Ixus 55	1	P	28,700	e-Country Enterprises	DOE	O			A4 FORM		*for repair*	948306557	
30/Mar/06	Digital Camera	Canon Ixus 55	1	P	28,700	e-Country Enterprises	DOE	O			A4 FORM	EGG		948201074	
30/Mar/06	Digital Camera	Canon Ixus 55	1	P	28,700	e-Country Enterprises	DOE	O			A4 FORM			1148517446	
02/May/06	Airconditioned	Carrier A/C 1.5HP	1	P	17,380	Abenson, Inc.	DOE	O							
30/Mar/07	Cobra Microtalk HL-300P	Two way radio for short range	1 set			Eikoh Trading Co.,Inc.	DOE	O			A4 FORM				
12/Oct/07	PV Training Kit		1				DOE	O			A4 FORM				
	Interface Box and Logger for SHS (Solar Home System		10 sets				DOE	O			A4 FORM				
22/Jan/07	4 x 4 Vehicle	Nissan Frontier 2006 A/T	1			Donated	DOE	O			A4 FORM				
16/Mar/07	Fax Machine	Panasonic KXFT937CX	1	P	6,950	e-Country Enterprises	DOE	O			A4 FORM				
16/Mar/07	Laminating Machine	David-Link LM 330A Laminator	1	P	9,100	SUN EAST ASIA Corporation	DOE	O			A4 FORM				
20/Mar/07	Develop Copy Machine	Develop Ineo 350	1	P	229,000	Copylandia Office Systems	DOE	O			A4 FORM				
13/Jun/07	Laser Distance Meter	Impulse 200LR (S/N: i11584)	1	¥	370,000	Laser Technology	DOE	O			A4 FORM				
24/Aug/07	Auto CAD-Software	Autodesk	1	P	71,000	Microphase Corporation	DOE	O			A4 FORM				
12/Oct/07	PV Training Kit		1 set				DOE	O			A4 FORM				
	Solar Panel	20W, Mono-Cystal, Voc:20V	2			Photon Energy System Limited									PM0020
	Charge Controller	DC12V-3A, PWM	1			Phocos									CA06-2.1
	Charge Controller	DC12V-10A, PWM	1			Morning Star									SHS-10
	Monitoring Panel for BCS	DC12V-30A	1			Cadwill Corporation									BMP 12-30A
	Storage Battery	DC12V-7.2Ah, Seal type	2			Chloride Eastern Industries Ltd.									EP 7.2-12
	Lamp	DC12V-11W, CFL	3			Firefly Lighting Co., Ltd.									FES2U 11/12
	Switch	Thumbler Switch	3			Eagle Electric									735N
	DC Power Supply	IN:AC220V, OUT:DC0-30V,	2			EZ Digital Co. Ltd.									GP-4303D
	Suitcase		1												
	Carrier Box		1												
08/Sep/08	Desktop Computer	Samsung with software	1	P	49,700	Comp Link	DOE	O			A4 FORM				

Field	Year	Period	Visited Site(s)	No. of Participants	Name of C/P attended (REMD Staff)	Pupose
MHP	2004	Aug. 9 – 13	Badiangan, Ajuy, Iloilo Agbobolo, Ajuy, Iloilo Balunos, Ajuy, Iloilo Alapasco, Badad, Iloilo	3	Epiganio G. Gacusan Jr. Winifred S. Malabanan Salvador Senorio (ANEC)	Monitoring of Existing micro-hydro
	2004	Sep. 18 – 22	Debutunan, Dipaculao, Aurora	2	Epiganio G. Gacusan Jr. Winifred S. Malabanan	Site reconnaissance of potential site
	2004	Oct. 6 – 10	Pntilian, Balbalan, Kalinga Sesec-An, Balbalan, Kalinga Talalang, Balbalan, Kalinga	2	Nicanor M. Lopez Winifred S. Malabanan	Monitoring of Existing micro-hydro
	2004	Oct. 21 – 24	Debutunan, Dipaculao, Aurora	2	Epiganio G. Gacusan Jr. Winifred S. Malabanan	Site reconnaissance of potential site
	2004	Oct. 27 – 29	Mahagnao, Burauen, Leyte	2	Amulfo M. Zabala Jennifer L. Morante	Monitoring of Existing micro-hydro
	2004	Nov. 19	Matitunao, Badian, Cebu Basak, Badian, Cebu	2	Nicanor M. Lopez Epiganio G. Gacusan Jr.	Hands-on Training
	2005	Feb. 8 – 12	Badiangan, Ajuy, Iloilo Agbobolo, Ajuy, Iloilo Varotac Viejo, Ajuy, Iloilo Pargi, Ajuy, Iloilo Pitac, Tibiao, Antique	4	Epiganio G. Gacusan Jr. Winifred S. Malabanan Richard F. Russel (VFO) Salvador Senorio (ANEC)	Monitoring of Existing micro-hydro (E/M)
	2005	Feb. 21 – 25	Toblo, Tublay, Buenget Ba-yan, Tublay, Buenget Tawangan, Kawayang, Benguet	5	Rey V. Salvania Nelson Gajardo Edgar Molintas (ANEC) Brandy Bitalan (ANEC) Arnol Balnges (ANEC)	Monitoring of Existing micro-hydro (E/M)
	2005	Feb. 28 – Mar. 2	Pntikian, Balbalan, Kalinga	4	Robert G. Dolojan Nelson Fajardo Edgar Molintas (ANEC) Constantino Sudaypan (ANEC)	Monitoring of Existing micro-hydro (E/M)
	2005	Apr. 14 – 19	Calapadan, Barbaza, Antique Lanas, Barbaza, Antique Bagong Varrio, Makato, Aklan	5	Epiganio G. Gacusan Jr. Robert G. Dolojan Magdaleno, M. Baclay Jr. (VFO William M. Carido (VFO)	Monitoring of Existing micro-hydro Site Reconnaissance of potential sites

	2005	May. 9 – 11	Ditunado, San Luis, Aurora	2	Arturo Torralba Amulfo M. Zabala	Site Inspection
	2005	Sep. 13 – 17	Badiangan, Ajuy, Iloilo Agbobolo, Ajuy, Iloilo Talo-Ato, San Dionisio,	–	–	OJT on monitoring of existing MHP
	2005	Nov. 22 – 23	Balonan, Siaton, Negros Occidental	6	2 members of REMD staff	Site reconnaissance of potential site
	2006	Jan. 23 – 25	Mahagnao, Burauen, Leyte	7	–	Maintenance of Electro-Mehcanical Equipment
	2006	Apr. 3 – 6	Bagung-Bario, Makato, Aklan Rosal-Rivera, Lubacau,	3	2 members of REMD staff	Monitoring of Existing micro-hydro Site Reconnaissance of potential site
	2006	Apr. 18	Bagong Bayan, Roxas, Palawan	5	2 members of REMD staff	Monitoring of Existing micro-hydro
	2006	Oct.12-15	Badiangan, Agbobolo, Rosal-Rivera (Panay)	1	Ray V. Salvania	Monitoring of existing micro hydro sites for the Rehabilitation Program
	2006	Dec.4-8	Calapadan,Lanas, Pitac	1	Mr. Epifanio E. Gacusan Jr	Monitoring of existing micro hydro sites for the Rehabilitation Program
	2007	Jan.15-19	Calapadan,Lanas, Pitac	1	Ms. Ressele G. Pandaracan	OJT for Survey of rehabilitation project
	2007	Jan. 15-19	Calapadan MHP and Lanas MHP (Barbaza, Antique) Pitac MHP (Tibiao, Antique)	1	Nelson A. Fajardo	OJT on monitoring of existing MHPs
	2007	Jun. 25-30	Province of Aklan Province of Antique	2	Mr. Epifanio E. Gacusan Jr Ms. Ressele G. Pandaracan	OJT for Site Reconnaissance at candidate sites of Pilot Project
	2007	Sep. 4-8	Sebaste, Antiqe	2	Mr. Epifanio E. Gacusan Jr Ms. Ressele G. Pandaracan	OJT for Field Survey of MHP Pilot Project Site
	2007	Nov. 12-16	Lanas, Sebaste Antique	1	Ms. Ressele G. Pandaracan	OJT on Survey for Location of Households
	2008	Feb. 15 – 23	Badiangan MHP and Agbobolo MHP (Ajuy, Iloilo)	1	Rey V. Salvania Nelson A. Fajardo	OJT on field survey at MHP rehabilitation project sites
	2008	May 27 – 30	Badiangan MHP and Agbobolo MHP (Ajuy, Iloilo)	3	Rey V. Salvania Nelson A. Fajardo Russele G. Pandaracan	Follow-up survey for MHP rehabilitation project sites
	2008	June 3 – 7	Dao-angan MHP, Gawa-an MHP, and Balbalasang MHP (Balbalan, Kalinga)	3	Rey V. Salvania Nelson A. Fajardo Russele G. Pandaracan	OJT on monitoring of existing MHPs for rehabilitation projet site selection
	2008	Jul.9-15	Sebaste, Antiqe	2	Mr. Epifanio E. Gacusan Jr Ms. Ressele G. Pandaracan	OJT on Inspection of construction

	2008	Aug.19-22	Sebaste, Antiqe	2	Mr. Epifanio E. Gacusan Jr Ms. Ressele G. Pandaracan	OJT on Inspection of construction
	2008	Nov.17-20	Sebaste, Antiqe	2	Mr. Epifanio E. Gacusan Jr Ms. Ressele G. Pandaracan	OJT on Inspection of construction
	2008	Dec. 15 - 17	Igpatuyao MHP (Sebaste, Antique)	3	Rey V. Salvania Nelson A. Fajardo Russele G. Pandaracan	OJT on construction supervision at pilot project site
	2009	Jan.20-23	Sebaste, Antiqe	1	Ms. Ressele G. Pandaracan	OJT on Inspection of Construction of Civil Structure
	2009	Jan. 21-24	Dao-angan MHP, Gawa-an MHP, and Balbalasang MHP (Balbalan, Kalinga)	1	Ronaldo T. Angeles	OJT on Inspection of ELC Installation at rehabilitation projet site
	2009	Jan. 26-30	Igpatuyao MHP (Sebaste, Antique)	3	Rey V. Salvania Ronaldo T. Angeles	OJT on Inspection of Electrical and Mechanical Equipment
	2009	May. 13-16	Dao-angan MHP, Gawa-an MHP, and Balbalasang MHP (Balbalan, Kalinga)	1	Peter A. Sablay	OJT on Moniroting at rehabilitation projet site
	2009	May. 18-20	Igpatuyao MHP (Sebaste, Antique)	2	Rey V. Salvania Richard Bacray	OJT on Monitoring of Electrical and Mechanical Equipment
	2009	Jun. 22	Igpatuyao MHP (Sebaste, Antique)	1	Richard Bacray	OJT on Monitoring of civil structure
PV	2004	Aug. 9 - 13	Badiangan, Agbobolo, Balunos, Manganese, Bayas, Manipulon, Loguingot, Alapasco (Iloilo)	3	Epifanio G. Gascusan Winifred S. Malabanan	Monitoring of existing micro hydro and PV sites. (Hands-on training)
	2004	Oct. 13 - 15	Tabla, Pangan-an, Olango (Cebu)	3	Nicanor M. Lopez Romulo B. Callangan Magdaleno M. Baclay	Monitoring of existing PV sites Hands-on training
	2004	Oct. 26 - 28	Pueruto, Princesa	1	Jaime B. Planas	Bidding evaluation for New Ibajay PV
	2005	May 8 - 9	Pangan-an (Cebu)	2	Ray V. Salvania Ida A. Madrideo	Installation of data logger Hands-on training
	2005	May 10 - 11	New Ibajay (Palawan)	1	Joselito E. Calip	Investigation of fire accident
	2005	July 6 - June 8	Atulayan island (Camarines Sur)	2	Roberto G. Dolojan Russelle G. Pandraoan	OJT for Survey of rehabilitation project

	2005	Aug. 31 – Sep. 2	Pangan-an (Cebu)	6	Romulo B. Callangan Arnulfo M. Zabala Russelle G. Pandaraoan	Lectures and Hands-on Training
	2005	Oct. 28 – Nov. 4	New Ibajay (Palawan)	3		OJT for Inspection of replaced batteries and data logging
	2005	Nov. 8 – 10	Pangan-an (Cebu)	5		OJT for Installation of data logger
	2006	Mar. 1 – 3	New Ibajay (Palawan)	1	Jaime B. Planas	OJT for Final inspection before hand over from UNDP to DOE
	2006	Apr. 17 – 22	New Ibajay, Bagon Bayan, Sicud, Bungo (Palawan)	5	Ronnie N. Sargento Romeo M. Galamgam	OJT for 3 UNDP sites and 1 ADB site
	2006	May 31 –Jun. 2	Pangan-an (Cebu)	4	Romeo M. Galamgam	OJT for monitoring, load management and plan of battery replacement.
	2006	Oct. 5 – 7	Cheey, Quezon, Panlaitan (Palawan)	3	Romeo M. Galamgam	OJT on monitoring and evaluation of existing BCS
	2006	Nov. 12 – 18	New Ibajay, Sicud, Bunog (Palawan) Magga, Alcantara, Pangan-an (Cebu)	7	Joselito E. Calip	OJT on monitoring of PV system and user training
	2007	Feb. 10	Salamanca (Cebu)	7	Joselito E. Calip	OJT on monitoring of PV system and user training
	2007	Jun. 27 – 30	Villa Laua-an, Villa Sal, Isla de Cana (Panay)	1	Romeo M. Galamgam	OJT for user training methods and installation of data logger
	2007	Nov. 5 – 9	Balugo (Leyte)	3	Romeo M. Galamgam Jaime B. Planas	OJT on monitoring of existing BCS and house survey
	2008	Jan. 21 – 25	Balugo (Leyte)	6	Romeo M. Galamgam Joselito E. Calip	OJT of monitoring of existing BCS and technician training
	2008	Feb. 18 – 25	Balugo (Leyte)	5	Romeo M. Galamgam Joselito E. Calip	OJT on inspection of rehabiritated PV system and user training
	2008	May 27 – 30	Balugo (Leyte)	3	Arnulfo M. Zabala	OJT on monitoring of BCS and user training
	2008	Jun. 3 – 7	Pinamgo, Alumar, Mahanay, Bilangbilangan	3	Romeo M. Galamgam	OJT on monitoring of existing BCS and user training
		Jun 22 – 25	Islade Cana, Ibajay (Panay)	2	Joselito E. Calip	OJT for monitoring of exsisting PV system and operation method of data
	2008	Jun. 23 – 27	Alumar (Bohol)	5	Romeo M. Galamgam	OJT on user training and system design
	2008	Aug. 26 – 30	Alumar (Bohol)	4	Romeo M. Galamgam Jaime B. Planas	OJT on design of individual wiring and user training
	2008	Sep. 20 – 30	Alumar (Bohol)	4	Romeo M. Galamgam	OJT on inspection of rehabiritated PV system and user training
	2009	Jan. 26 – 27	Alumar (Bohol)	6	Joselito E. Calip Romeo M. Galamgam	OJT on Monitoring and Retraining to technicians & users
	2009	Jan. 29 – 30	Balugo (Leyte)	6	Romeo M. Galamgam Joselito E. Calip	OJT on Monitoring and Collecting of data logger and Retraining to technicians &

	2009	May. 12 – 14	Balugo (Leyte)	1	Romeo M. Galamgam	OJT on Monitoring and Collecting of data logger and Retraining to technicians &
	2009	Jun. 18 –20	Alumar (Bohol)	4	Joselito E. Calip Romeo M. Galamgam	OJT on Monitoring at Rehabilitation Project site
Social	2006	Oct.12–15	Badiangan, Agbobolo, Rosal–Rivera (Panay)	1	Ray V. Salvania	Monitoring of existing micro hydro sites for the Rehabilitation Program
	2006	Dec.4–8	Calapadan,Lanas, Pitac	1	Ms. Ida A. Madrideo	Monitoring of existing micro hydro sites for the Rehabilitation Program User Training at Pitac
	2007	Jan.15–19	Calapadan,Lanas, Pitac	1	Ms.Ida A. Madrideo	BAPA formulation at Rehabilitation Project Sites
	2007	Jun. 25–30	Province of Aklan Province of Antique Villa Laua–an, Villa Sal, Isla de Cana (Panay)	2	Ms. Hildelita Villanueva Ms. Ida Madrideo	OJT on Social Preparation for New MHP development Candidate Sites OJT on Social Investigation for Existing PV Site
	2007	Sep. 4–8	Sebaste, Antiqe	2	Ms. Hildelita Villanueva Ms. Ida Madrideo	OJT on Social Investigation for MHP Pilot Project Site
	2007	Nov. 5 – 9	Balugo (Leyte)	2	Ms. Hildelita Villanueva Ms. Ida Madrideo	OJT on Social Investigation for PV Rehabiritation Site
	2008	Jan. 21 – 25	Balugo (Leyte)	1	Ms. Ida Madrideo	OJT on Bapa Formulation for PV Rehabiritation Site
	2008	May 27 – 30	Balugo (Leyte)	2	Ms. Hildelita Villanueva Mr. Romeo M. Galamgam	OJT on Bapa Strengthen at PV
	2008	Jun. 3 – 7	Pinamgo, Alumar, Mahanay, Bilangbilangan	2	Ms. Hildelita Villanueva Ms. Ida Madrideo	OJT on Bapa Strengthen at PV
	2008	Aug. 26 – 30	Alumar (Bohol)	2	Ms. Hildelita Villanueva Mr. Romeo M. Galamgam	OJT on Bapa Strengthen at PV
	2008	Sep. 8–11	Brgy. Dao–angan Brgy.Gawa–an	3	Ms. Hildelita Villanueva Ms. Ida Madrideo Mr. Romeo M. Galamgam	OJT on Bapa Strengthen at MHP
	2008	Oct. 28–31	Alumar (Bohol)	2	Ms. Hildelita Villanueva Ms. Ida Madrideo	OJT on Bapa Strengthen at PV
	2008	Nov.17–20	Sebaste, Antiqe	2	Ms. Hildelita Villanueva Ms. Ida Madrideo	OJT on Bapa Formulation for MHP Pilot Project
	2009	Jan. 20–23	Sebaste, Antiqe	5	Ms. Hildelita I. Villanueva Ms. Ida A. Madrideo Ms. Lourdes S. Arciaga Ms. Tesa Ms. Helem Alfonso	OJT on Bapa Formulation for MHP Pilot Project
	2009	May. 12 – 14	Balugo (Leyte)	1	Romeo M. Galamgam	OJT on Monitoring and Collecting of data logger and Retraining to technicians &

	2009	May. 18–20	Igpatuyao MHP (Sebaste, Antique)	1	Ms. Lourdes S. Arciaga	OJT on Monitoring of BAPA at Pilot Project site
	2009	Jun. 18 –20	Alumar (Bohol)	3	Ms. Hildelita I. Villanueva Ms. Ida A. Madrideo Ms. Lourdes S. Arciaga	OJT on Monitoring at Rehabilitation Project site
	2009	Jun. 22	Igpatuyao MHP (Sebaste, Antique)	2	Ms. Ida Madrideo Ms. Lourdes S. Arciaga	OJT on Monitoring of BAPA at Pilot Project site

Field	Year	Period	Venue	No. of Participants	Name of C/P attended (REMD Staff)	Purpose	Handout
MHP	2004	Nov. 8	VFO Office	22	Nicanor M. Lopez Epiganio G. Gacusan Jr.	Hydro Development Cycle Reconnaissance Study of MHP MHP Development for Rural	
	2005	Jan. 24 – 28	TUP (Negros Occidental)	28	Nicanor M. Lopez Rey V. Salvania Amulfo Zabala	Manufacturer's Training onMicro-hydro Turbine	
	2005	Apr. 18	CPU (Iloilo)	13	Epiganio G. Gacusan Jr. Robert G. Dolojan Magdaleno, M. Baclay Jr. (VFO) William M. Carido (VFO)	Training on Monitoring of MHP	
	2005	Jul. 26	MFO Office	–	–	Training on Monitoring and basic Micri-hydropower Technology	
	2005	Oct. 18 – 20	MFO Office	7	3 members of REMD staff	Training on Basic MHP Technology Field Training on monitoring	
	2005	Nov. 8 – 11	VFO Office	7	3 members of REMD staff	Training on Basic MHP Technology Field Training on monitoring	
	2005	Nov. 14 – 17	DOE	15	8 members of REMD staff	MHP Generating system Technology Basic hydrology Potential site survey	
	2006	Feb. 11 – 26 Mar. 5 – 15	Philippines Indoensia	4	1 person from REMD	Training/Study on Micro-hydropower Turbine	
	2006	Jun. 5	VFO Office	–	2 members of REMD staff	Hands-on Training on Instrument Use for site survey and monitoring	
	2006	Jun. 8	MFO Office	–	–	Training on Site reconnaissance and F/S of MHP potential projects	
	2006	Jun. 17	MFO Office	–	2 members of REMD staff	Hands-on Training on Instrument Use for site survey and monitoring	
	2006	Dec. 11 – 15	De La Salle University (Manila)	14	Nelson A. Fajardo	1st ELC fabricaiton training	Handout FY2006 1st ELC training.pdf
	2007	Jan. 20 – Mar. 3	Bandung, Indonesia	4	Mr. Rey V. Salvania (REMD, DOE) Mr. John Dandee D. Hechanova(CPU-ANEC) Mr. Ronald D. Angid (KASC-ANEC) Mr. Isidro Antonio V. Marfori III (CeMTRE)	T-12 Turbine Manufacturing Training	

	2007	Aug. 22 – Sep. 5	De La Salle University (Manila)	12	Nelson A. Fajardo	2nd ELC fabricaiton training	Handout FY2007 2nd ELC training.pd
	2007	Nov. 03 – Dec. 13	Bandung, Indonesia	4	(MFO), Jose V. Hernandez (CeMTRE), Obed Jose Bilowan (KASC-ANEC), Edgar M. Molintas (BSU-ANEC)	T-12 Turbine Manufacturing Training	
	2008	Jul. 28 – Aug. 8	De La Salle University (Manila)	6	Nelson A. Fajardo	3rd ELC fabricaiton training	Handout FY2008 3rd ELC training.pdf
	2008	Aug. 20 – Sep. 20	Ugong Machine Shop, Manila	4	(CMU-ANEC), Victorino T. Taylan (CLSU-ANEC), Harvey L. Lazalita (SU-ANEC), Abraham V. Angod Center (MSU-ANEC)	T-12 Turbine Manufacturing Training	
	2008	Nov.10-14	DOE-AVR	15	Mr. Epifanio E. Gacusan Jr Ms. Ressele G. Pandaracan	Establishment in knowlage and skill on MHP technology which have been tarined in previous activities	MHP-Technology Presentation Material MHP Review Training Examination
PV	2004	Nov. 10 – 12	Pangan-an (Cebu)	11	Nicanor M. Lopez Joselito E. Calip Roberto G. Dolojan	Technical Training on monitoring and evaluation of Centralized PV system	
	2005	Feb. 21 – 25	Pangan-an, Cabadiangan, Mangga, Salagmaya (Cebu)	13	Roberto G. Dolojan Romeo M. Galamgam Ramon O. Jaurigue	Technical Training on monitoring and evaluation of Centralized PV system and BCS	
	2005	Mar. 1 – 2	CEPALCO, Cagayan de	9	Jaime B. Planas	Technical Training on monitoring and evaluation of Grid Connected PV	
	2005	Mar. 4 – 6	New Ibajay (Palawan)	7	Arnulfo M. Zabala	Technical Training on monitoring and evaluation of Centralized PV system	
	2005	Sep. 26 – Oct. 6	Cebu, Palawan	18	Romulo B. Callangan, Jr Jaime B. Planas Joselito E. Calip Russelle G. Pandaraoan Nelson A. Fajardo Romeo M. Galamgam Arnulfo M. Zabala	Solar PV Trainer's training (Lectures + Hands-on Training)	PV Training Handout

	2006	Jan. 25 – Jan. 26	DOE	41	Roberto Dolojan Joselito E. Calip Dante L. Castillo Winifredo S. Malabanan	Preliminaly training (Lectures + Hands-on Training)	PV Training 2006 Jan25-26
	2006	Feb. 12 – 21	Cebu	42	Romulo B. Callangan, Jr Jaime B. Planas Joselito E. Calip Russelle G. Pandaraoan Winifredo S. Malabanan Ronaldo T. Angeles Nelson A. Fajardo [Trainer] Romeo M. Galamgam Arnulfo M. Zabala	Solar PV Trainer's training (Lecture + Hands-on Training)	Basic Training Course Feb13 2006
	2006	Dec. 4 – Dec. 9	Cebu	29	Jaime B. Planas Richard G. Dela Cruz Ramon O. Jaurigue [Trainer] Joselito E. Calip	Solar PV Trainer's training (Lecture + Hands-on Training)	PV Training Text_FY2006-2007 Design of Centralized PV
	2007	Feb. 4 – Feb. 9	Cebu	18	[Trainer] Joselito E. Calip	Solar PV Trainer's training (Lecture + Hands-on Training)	
	2007	Jun. 18 – Jun 22	Baguio (Luzon)	21	[Trainer] Romeo M. Galamgam Joselito E. Calip	Solar PV Trainer's training (Lecture + Hands-on Training)	
	2007	Oct. 15 – Oct. 20	Davao (Mindanao)	23	Winifredo S. Malabanan Ronaldo T. Angeles Rey V. Salvania [Trainer] Arnulfo M. Zabala Jaime B. Planas	Solar PV Trainer's training (Lecture + Hands-on Training)	
	2008	Jun. 8 – Jun. 12	Tagaytay (Luzon)	19	[Trainer] Arnulfo M. Zabala Jaime B. Planas Joselito E. Calip Nelson A. Fajardo Winifredo S. Malabanan	Solar PV Engineer training (Lecture + Hands-on Training)	PV Engineer Training Text_FY2008 User_Training_Material_BCS User_Training_Material_SHS Technician_Training_Material_BCS Technician_Training_Material_SHS
	2008	Oct. 20 – Oct. 25	Talibon (Bohol)	27	[Trainer] Romeo M. Galamgam Ronaldo T. Angeles Rey V. Salvania	Solar PV Engineer training (Lecture + Hands-on Training)	
	2008	Nov. 17 – Nov. 22	Davao (Mindanao)	18	[Trainer] Joselito E. Calip	Solar PV Engineer training (Lecture + Hands-on Training)	

	2008	Jun. 17,18,20 Sep. 2, Oct. 29,30 Nov. 3,4,5,26	REMD 2nd floor	7	Arnulfo M. Zabala Jaime B. Planas Joselito E. Calip Russelle G. Pandaraoan Winifredo S. Malabanan Ronaldo T. Angeles Rey V. Salvania (2 – 3 days training)	Training on PV equipment performance test (PV module, Charge controller, Inverter)	DC Power Supply Production of PV module Test method of charge controller Test method of PV inverter Test method of PV module
	2009	Jun. 23 – 24	CvSU	47	Arnulfo M. Zabala Joselito E. Calip Romeo M. Galamgam	Training on Training Module and monitoring	
SP	2005	Oct. 18	MFO Office	–	3 members of REMD staff	Training on Social Preparation Field Training on monitoring	
	2006	Apr. 24 – 29	San Jose, Antique	17	–	Sustainability Improvement Training for BAPA in Antique	
	2009	Jun. 24	CvSU	47	Ms. Hildelita I. Villanueva	Training on BAPA monitoring	

Field	Year	Date/Period	Venue	No. of Participants	Name of C/P attended	Purpose/Subject	Handout/Report No.
Overall	2007	Nov. 20	Mandarin Oriental Hotel	70	Mr. Mario C. Marasigan, and all C/Ps	To listen to voices from beneficiaries of the Project; To share experiences of the Project with RE-related agencies; To discuss sustainability of RE systems in order to adjust the direction of RE-based rural electrification in the Philippines	Briefing of the Project Seminar Action Plan
	2009	Jun. 23-24	Cavite State Univ.	50	Ms. Evelyn N. Reyes, and all C/Ps	To explaine Monitoring Framework and PV Training Module	
	2009	Jun. 29	Dusit Hotel	70	Mr. Mario C. Marasigan, and all C/Ps	To share experiences and lessons learned with stakeholders	
MHP	2005	Jul. 25 - 29	Ateneo de Davao University	23	-	Manufacturers' Training/Workshop on Micro-hydro Turbine by CeMTRE	
	2005	Aug. 17 - 19	JICA Office	48	-	JICA-NETSeminar on Micro-hydropower Generating System	
	2005	Oct. 14	Cebu City	33	-	Workshop on Micro-hydropower Development	
	2005	Oct. 17	Davao City	61	-	Workshop on Micro-hydropower Development	
	2005	Oct. 24 - 29	Bulacan State University	23	-	Manufacturers' Training/Workshop on Micro-hydro Turbine by CeMTRE	
	2006	Jan. 26 -27	PNOC (Manila)	100	-	Seminar on Energy Sustainability through Hydropower Systems	
	2006	Oct. 18, 19	De Ls Salle Univeisity	35	Epifanio G. Gacusan Rey Salvania	Water turbine manufacturing technology	
	2006	Oct. 23 -24	JICA Office	-	-	Second JICA-NETSeminar on Micro-hydropower Generating System (Advance Course)	
	2007	Jan.29-Feb.2	Laoagan Resort, Tabuk, Kalinga Green View lodge, Banaue, Ifugao	Kalinga: 12 Ifugao: 10	Mr. Arnulfo M. Zabala	Technology Transfer to LGU engineer MHP Technology (Basic Course)	MHP-Technology Presentation Material
	2007	Jun.18-22	Laoagan Resort, Tabuk, Kalinga Banaue Hotel, Ifugao	Kalinga: 9 Ifugao: 6	Ms. Ressele G. Pandaracan	Technology Transfer to LGU engineer MHP Technology (Basic/Advance Course)	MHP-Technology Presentation Material

	2007	Aug. 27, 28	Ateneo de Davao University	refer to attached I-02		Transfer T-12 Turbine Manufacturing Technology	Water Turbune Workshop Presentation Material
	2008	Jan. 14-18	Laoagan Resort, Tabuk, Kalinga Green View lodge, Banaue, Ifugao	Kalinga: 24 Ifugao: 12	Ms. Ressele G. Pandaracan	Technology Transfer to LGU engineer MHP Technology (Advance Course)	MHP-Technology Presentation Material
Social	2006	Oct.16-17	City Garden Hotel, Makati City	51	Mr. Epifanio E. Gacusan Jr Mr.Roberto G. Dolcjan Ms.Ida A. Madrideo Mr. Ricardo G. dela Cruz Mr. Ronnie N. Sargento Mr. Arturo F. Torralba Jr. Ms. Ressele G. Pandaracan Ms.Jenny L. Morante Ms. Heldelita I. Vilanueva Mr. Rey Salvania Mr.Nelson A. Fajardo	To enhance and improve the capability of the DOE, ANECs, LGUs, NGOs, and other stakeholders on social preparation for sustainable operation of renewable energy projects To develop a better understanding about proper methods and processes, and effective and appropriate implementation, including the key factors of social preparation for rural electrification	WS-Manila Presentation Materials
	2007	Jan.29-Feb.2	Laoagan Resort, Tabuk, Kalinga Green View lodge, Banaue, Ifugao	Kalinga: 34(1st-day) 27(2nd-day) Ifugao: 19	Mr. Arnulfo M. Zabala Mr. Romulo B. Callangan Jr. Ms. Ida A. Madrideo Ms. Jennifer L. Morante	Capacity building of the local government units (LGUs) and Affiliated Non-conventional Energy Centers (ANECs) as major stakeholders in the development of the barangay electrification program in the area.	SP-Training Presentation Materials
	2007	Jun.18-22	Laoagan Resort, Tabuk, Kalinga Banaue Hotel, Ifugao	Kalinga: 36 Ifugao: 15	Ms. Hildelita Villanueva Ms. Ida Madrideo	Sustainability improvement of renewable energy development in Brgy. Electrification	SP-Training Presentation Materials
	2008	Jan. 14-18	Laoagan Resort, Tabuk, Kalinga Green View lodge, Banaue, Ifugao	Kalinga: 57 Ifugao: 29	Ms. Hildelita Villanueva Ms. Ida Madrideo	Follow up organizing 3 Bapa of the upland dwellers project	SP-Training Presentation Materials
	2008	Nov.5-6	DOE-AVR	15	Ms. Hildelita Villanueva Ms. Ida Madrideo	Establishment in knowlage and skill on Bapa Formulation which have been tarined in previous activities	SP-Training Presentation Materials

Field	Year	Date/Period	Venue	No. of Participants	Name of C/P attended	Purpose/Subject	Handout
MHP	2004	Nov. 12	DOE	–	REMD staff	Training on Micro-hydropower Technology	
	2006	Oct.25-27	DOE	9	Ms.Russell G.Pandaraon Ms.Hildelita I. Villanjeva Mr.Roberto G. Dolojan Ms. Ida A.Madrideo Mr.Nelson A.Fajardo Mr.Arnie M. Zabala Mr.Rey Salvania Mr.Ramon o. jaurigue Ms.Elinor P. Quinto	Outline of Hydropower and Catchment Area	MHP-Technology Presentation Material
	2006	Nov.28	DOE	7	Ms.Russell G.Pandaraon Ms.Hildelita I. Villanjeva Ms. Ida A.Madrideo Mr.Arnie M. Zabala Mr.Rey Salvania Mr.Ramon o. jaurigue Ms.Elinor P. Quinto	Potential Site and Duration Curve	MHP-Technology Presentation Material
	2007	Sep. 04	Meeting Room	2	Rey, Nelson	Selection of Rehabilitation Site	I-04 Selection of Rehabilitation Site
	2007	Nov.28	DOE	6	Ms.Russell G.Pandaraon Ms.Hildelita I. Villanjeva Ms. Ida A.Madrideo Mr.Arnie M. Zabala Mr.Rey Salvania Mr.Ramon o. jaurigue	Site Reconnaissance Survey and Civil Design	MHP-Tecnnology Presentation Material
	2008	Jun. 11	CeMTRE (DLSU)	3	Isidro V. Marfori Rey V. Salvania Nelson A. Fajardo	Cross Flow Turbine Design	01 11JUN2008 Crossflow Turbine Desigen(CeMTRE).pdf
	2008	Jul. 21	DOE	2	Rey V. Salvania Nelson A. Fajardo	Review of Turbine Design for Badiangan MHP	02 21JUL2008 Review of Badiangan WT Design.pdf
	2008	Aug. 1	DOE	2	Rey V. Salvania Nelson A. Fajardo	Review of Design Conditions for Water Turbine Manufacturing Training	03 01AUG2008 Disigin Conditions for WT Training.pdf

PV							
	2004	Nov. 5	DOE			Basic PV technology	
	2005	Apr. 4 – 7	DOE			Basic PV technology	
	2005	Apr. 11 – 14	DOE			Basic PV technology	
	2005	Apr. 18 – 21	DOE			Basic PV technology	
	2005	Apr. 25 – 28	DOE			Basic PV technology	
	2006	Mar. 23	DOE			Performance test method of charge controller	
	2006	Apr. 6	DOE				
	2006	Apr. 11	DOE			Performance test method of charge controller	
	2006	May 23	DOE			How to measure I-V curve	
	2006	May 24	DOE			Performance test method of charge controller	
	2006	Jun. 6	DOE			Basic PV technology	
	2006	Oct. 13	REMD 2nd floor	6	Russelle G. Pandaraoan Arnulfo M. Zabala Jaime B. Planas Winifredo S. Malabanan Robert G. Dolojan	Basic PV system	PV Training Text_FY2006-2007
	2006	Oct. 27	REMD 2nd floor	7	Hildelita I. Villanueva Ida A. Madrideo Rey V. Salvania Russelle G. Pandaraoan Nelson A. Fajardo Arnulfo M. Zabala Dante L. Castillo	Basic electricity	PV Training Text_FY2006-2007
	2007	Nov. 10	REMD 2nd floor	7	Arnulfo M. Zabala Dante L. Castillo Joselito E. Calip Jennifer L. Molante	Basic electricity	PV Training Text_FY2006-2007
	2007	Feb. 1	REMD 2nd floor	6	Nelson A. Fajardo Winifredo S. Malabanan Robert G. Dolojan Ramon O. Jauligue	Review of Previous Examination	PV Training Text_FY2006-2007
	2007	Feb. 2	REMD 2nd floor	8	Jaime B. Planas Nelson A. Fajardo Winifredo S. Malabanan Robert G. Dolojan Ramon O. Jauligue	Review of Previous Examination	PV Training Text_FY2006-2007
	2007	Feb. 28	REMD 2nd floor	4	Romulo B. Callangan Jaime B. Planas Nelson A. Fajardo	Review of Previous Examination	PV Training Text_FY2006-2007
	2007	Jul. 12	REMD office	4	Ida A. Madrideo Rey V. Salvania Russelle G. Pandaraoan Elinor P. Quinto	Basic PV technology	PV Training Text_FY2006-2008

	2007	Jul. 16 – Jul. 19	REMD office	4	Hildelita I. Villanueva Ida A. Madrideo Elinor P. Quinto Ramon O. Jaurigue	Basic PV technology	PV Training Text_FY2006-2007
	2007	Oct. 9	REMD office	3	Jaime B. Planas Arnulfo M. Zabala	I-V curve	I-V Curve
	2008	Jan. 31	REMD office	7	Robert G. Dolojan Ramon O. Jauligue	Case example of PV project in forein country	
	2008	Feb. 13	REMD 2nd floor	4	Romeo M. Galamgam Joselito E. Calip	Introduction trend of PV system in the world	
Social	2007	Jun. 14	REMD office	3	Ms. Hildelita Villanueva Ms. Ida Madrideo Ms. Elinor P. Quinto	Outline of Bapa Formulation	Short Lecture Presentation Materials
	2007	Jul. 4	REMD office	2	Ms. Hildelita Villanueva Ms. Ida Madrideo	Contents of Social Preparation Monitoring of Existing Bapa	
	2007	Sep. 12	REMD office	6	Mr. Romulo B . Callangan Mr.Winifedo S. Malabanan Mr.Nelspn A. Fajardp Mr. Roberto G. Doicjan Ms. Hildelita Villanueva	Bapa Formulation for PV	

Rehabilitation Projects

Field	Period	Site	Scope of Work	Budget	Implementer	No. of Beneficiaries	Notes
MHP	Dec. 2006 – Mar. 2007	Bgy. Calapadan	Rehabilitation of Headrace	90,000	CPU-ANEC	22	Total Project Cost: P140,000
	Dec. 2006 – Mar. 2007	Bgy. Pitac	Rehabilitation of Intake Weir and Headrace	270,000	CPU-ANEC	99	Total Project Cost: P600,000
	Dec. 2007 – Mar. 2008	Brg. Lanas	Installation of Head-Tank	260,000	CPU-ANEC	21	Total Project Cost: P320,000
	Dec. 2007 – Mar. 2008	Brgy. Badiangan, Ajuy, Iloilo	Replacement of Turbine Installation of ELC	272,000	CPU-ANEC DLSU	58	
	Dec. 2007 – Mar. 2008	Brgy. Agbobolo, Ajuy, Iloilo	Installation of ELC	40,000	CPU-ANEC	37	
	Nov. 2008 – Jan. 2009	Brgy. Dao-angan, Balbalan, Kalinga	Installation of ELC	70,500	KASC-ANEC	98	
	Nov. 2008 – Jan. 2009	Brgy, Gawaan, Balbalan, Kalinga	Installation of ELC	61,500	KASC-ANEC	82	
PV	Jan. 21 – Feb. 28	Brgy. Balugo, Capoocan, Leyte	Rehabilitation of BCS	270,000	VSU-ANC	30	150W-BCS * 6 units Total Project Cost: P360,000
	Aug. 29 – Oct. 31	Brgy. Alumar, Jetafe, Bohol	Rehabilitation of BCS	270,000	USC-ANEC	50	Convert BCS into SHS Total Project Cost: P500,000

MHP Pilot Project

Field	Year	Period	Site	Scope of Work	Budget	Implementer	No. of Beneficiaries	Notes
MHP	2008	Jul. 2008- Jan 2009	Igupatoyao,Sebaste ,Antique	Construction of MHP Pilot Project	524,0000 23,000	CPU-ANEC DLSU (Turbine)	50	Proposal for MHP in Sitio Igpatuyao, Sebaste, Antique