



EIE-06-256 REEPRO

Intelligent Energy  Europe

# **Promotion of the Efficient Use of Renewable Energies in Developing Countries**

**REEPRO Level 3 Course 9  
Training on Renewable Energies and Biogas Plants  
Laos, November 6 - 14, 2009**

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January 2010

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## 1 Summary Sheet

**Training:** Training for Community Stakeholder (Village Mai)

**Task Number:** 05.02.10

**Date, Location:** 6/11/2009 – 14/11/2009  
Mai Village, Xai District, Oudomxay Province

**Time:** 8:30 – 4:30, Daily (Total: 72 hours)

**Theme:** Introduction of Renewable Energy, Biogas Plants

**Target Group:**  Level 1:  
 Level 2:  
 Level 3:

**Performance:** 9 days, 8 hours daily. Assisted the construction of 8 biogas plants from planning to final construction. 3 trainers were present.

**Participants:** 20 Participants; see attached for a list of participants.

**Short Description:** Level 3 Course 9 training was conducted on 6 – 14 November, 2009 following Level 2 Course 4 training that was conducted on 5 November, 2009. Trainers consisted of three members from the Community Development and Environment Association (CDEA) and the Science, Technology Research Institute (STRI). A total of 20 participants were selected based on experience in construction and willingness to participate. Participants were further divided into eight (8) groups; each group was responsible for the construction of a biogas plant. The course spanned 9 days and consisted of practice in biogas plant construction. Most notably, participants were taught how to select a proper location for the biogas plant, the dimensions of the plant, specific techniques in the construction process, and maintenance procedures for continued operation. The primary goal was to provide knowledge of biogas plant production to participants so they could spread the technology throughout the village starting with their own homes. In the future, Ban Mai will act as the model village for promotion of biogas plants in Laos.

**Download:** The presentations can be downloaded under [www.solpool.info](http://www.solpool.info)

**Location, Date, Signature:**

Mai Village, Xai District, Oudomxay Province

24 January, 2010



## 2 Workshop Preparation

Villagers were taught the theory of biogas plant construction during Course 2 Level 4 training which was conducted immediately prior to this training. Eight construction contractors attended the presentation, who would provide the technical experience for construction, and the remaining 12 participants, who were villagers, provided assistance with unskilled labour.

Mr. Bounpone Luangphimmajak from CDEA and Mr. Soukan Vannapho from STRI conducted the hands-on training of constructing biogas plants in Mai Village. Their role throughout training was to provide direction and technical assistance as necessary.

Eight individual sites were selected previous to training which would be the locations of biogas plants. Each site was located at a villager's household. Necessary materials and equipment for construction were obtained prior to this phase of training.

## 3 Workshop Performance

Days 1 - 9: 5 November – 13 November, 2009

- Mr. Soukan and Mr. Bounpone provided direction for participants of the training in the construction of eight biogas plants in Mai Village.
- Construction contractors took a lead role in the construction process. Villagers provided support through unskilled labor.

### 3.1 Presentation

Course 3 Level 9 Training focused on practice for the construction and maintenance of biogas plants. Thus, no presentation was given for this phase of the training.

### 3.2 Discussion

Participants were divided into eight groups to participate in the construction of biogas plants in Mai Village. The construction contractors took the lead on construction with assistance from villagers. CDEA and STRI were present to direct participants in selecting locations with sufficient space, dimensions of the plant, specific techniques in the construction process, and maintenance procedures for continued operation. The biogas digesters in Mai Village were 4 m<sup>3</sup> in volume. However, participants were taught how to size the plant according to their specifications and/or available space.

Eight biogas plants were constructed for the purpose of training. However, once built, these plants also provided gas for eight households serving a total of 48 beneficiaries

with gas for cooking and lighting. Additionally, eight construction contractors actively participated in the training, who could use that knowledge in future business ventures.

### 3.3 Conclusion

Eight biogas plants were successfully constructed in Mai Village with a total of 56 beneficiaries for this project. CDEA has since maintained contact with owners of the biogas plants, and thus far no major problems have arisen.

Beneficiaries were receptive to the biogas plants and enthusiastic about the development of the Community Development Fund. As Mai Village is the pilot village for household biogas production in Laos, CDEA is hopeful for the continued proliferation of biogas production in Laos.

## 4 Workshop Documentation

### 4.1 Invitation

This training was conducted immediately following Course 2 Level 4 training with the same participants, and thus can be considered a continuation of the previous session. No additional invitation was given for this phase.

### 4.2 Programme

Date, Time	Description	Facilitator
	Day 1: Thursday 5/11/2009	Mr. Soukan and
8:30 – 12:00	Biogas plant construction	Mr. Bounpone
12:00 - 1:30	Lunch	
1:00 – 4:30	Biogas plant construction (continue)	
	Day 2: Friday 6/11/2009	Mr. Soukan and
8:30 – 12:00	Biogas plant construction	Mr. Bounpone
12:00 - 1:30	Lunch	
1:00 – 4:30	Biogas plant construction (continue)	
	Day 3: Saturday 7/11/2009	Mr. Soukan and
8:30 – 12:00	Biogas plant construction	Mr. Bounpone
12:00 - 1:30	Lunch	
1:00 – 4:30	Biogas plant construction (continue)	

	Day 4: Sunday 8/11/2009	Mr. Soukan and
8:30 – 12:00	Biogas plant construction	Mr. Bounpone
12:00 - 1:30	Lunch	
1:00 – 4:30	Biogas plant construction (continue)	
	Day 5: Monday 9/11/2009	Mr. Soukan and
8:30 – 12:00	Biogas plant construction	Mr. Bounpone
12:00 - 1:30	Lunch	
1:00 – 4:30	Biogas plant construction (continue)	
	Day 6: Tuesday 10/11/2009	Mr. Soukan and
8:30 – 12:00	Biogas plant construction	Mr. Bounpone
12:00 - 1:30	Lunch	
1:00 – 4:30	Biogas plant construction (continue)	
	Day 7: Wednesday 11/11/2009	Mr. Soukan and
8:30 – 12:00	Biogas plant construction	Mr. Bounpone
12:00 - 1:30	Lunch	
1:00 – 4:30	Biogas plant construction (continue)	
	Day 8: Thursday 12/11/2009	Mr. Soukan and
8:30 – 12:00	Biogas plant construction	Mr. Bounpone
12:00 - 1:30	Lunch	
1:00 – 4:30	Biogas plant construction (continue)	
	Day 9: Friday 13/11/2009	Mr. Soukan and
8:30 – 12:00	Biogas plant construction	Mr. Bounpone
12:00 - 1:30	Lunch	
1:00 – 4:30	Biogas plant construction (continue)	

#### 4.3 Registration Form

Below is a snapshot of the registration form used to sign up villagers for the training session.










ລ/ດ	ຊື່ ແລະ າມສະກຸ	ຕຳແໜ່ງ	ບ່ອນປະຈຳກາ		Date
No	Name and Surname	Position	organization	Contact Information	Signature
1					
2					
3					



#### 4.4 Presentations

No presentations were given for Course 3 Level 9 Training.

#### 4.5 Signed List of Participants

List of Participant level 3 Mai and Bore Village, Xay District, Oudomxay Province.  
Date: Thursday 5/11/2009

No:	Pictures of participants	Name	Signature
1		ທ. ບໍ່ລິສາ	
2		ນ ທິ່ງ	
3		ທ້ວ ຂໍ້ເພັດ	
4		ທ້ວ ໂພນ ທາ	
5		ທ້ວ ຄຳອິ	
6		ສິມ ທິ່ງ	
7		ທ້ວ ແວ້	
8		ທ້ວ ຄິມ ທາ	
9		ທ້ວ ຄິມ ທາ	
10		ນ ທິ່ງ	

Trainer:   
 Approved by CDEP:   
 Field Manager:   
 Approved by CDEP:   
 Field Manager:   
 Champka KEOMANICHANI

11		ທ. ພິມສິດ	ພິມສິດ
12		ທ. ພິມ	ພິມ
13		ທ. ພິມ	ພິມ
14		ທ. ພິມ	ພິມ
15		ທ. ພິມ	ພິມ

16		ທ. ພິມ	ພິມ
17		ທ. ພິມ	ພິມ
18		ທ. ພິມ	ພິມ
19		ທ. ພິມ	ພິມ
20		ທ. ພິມ	ພິມ

Trainer: Approved by CSE: Field Manager:

### Registration of participant to one day

ລາຍຊື່ຜູ້ເຂົ້າຮ່ວມຝຶກອົບຮົມກ່ຽວກັບເຕັກນິກການກໍ່ສ້າງ ແລະ ການຄຸ້ມຄອງນໍາໃຊ້ເຕົ້າແກ້ສຊີວະພາບລະດັບ 2 (ສໍາລັບວິຊາການ) ທີ່ແຂວງອຸດົມໄຊ  
 List of participants of training on Biogas construction, how to operation and maintenance level 2 in Oudomxay Province

ລ/ດ No	ຊື່ ແລະ ນາມສະກຸນ Name and Surname	ຕໍາແໜ່ງ Position	ບ່ອນປະຈຳການ organization	ເບີໂທລະສັບ Telephone No.	ລາຍເຊັນ Signature
1	ທ. ພິມ	ທ. ພິມ	ທ. ພິມ		
2	ທ. ພິມ	ທ. ພິມ	ທ. ພິມ	2837778	
3	ທ. ພິມ	ທ. ພິມ	ທ. ພິມ	0950324	
4	ທ. ພິມ	ທ. ພິມ	ທ. ພິມ	2375245	
5	ທ. ພິມ	ທ. ພິມ	ທ. ພິມ	4551294	
6	ທ. ພິມ	ທ. ພິມ	ທ. ພິມ		
7	ທ. ພິມ	ທ. ພິມ	ທ. ພິມ	5112240	
8	ທ. ພິມ	ທ. ພິມ	ທ. ພິມ		ທ. ພິມ
9	ທ. ພິມ	ທ. ພິມ	ທ. ພິມ	7148856	ທ. ພິມ
10	ທ. ພິມ	ທ. ພິມ	ທ. ພິມ	5439153	
11	ທ. ພິມ	ທ. ພິມ	ທ. ພິມ	0905142110	ທ. ພິມ
12	ທ. ພິມ	ທ. ພິມ	ທ. ພິມ	55441507	ທ. ພິມ
13	ທ. ພິມ	ທ. ພິມ	ທ. ພິມ	5920845	ທ. ພິມ
14	ທ. ພິມ	ທ. ພິມ	ທ. ພິມ		ທ. ພິມ
15	ທ. ພິມ	ທ. ພິມ	ທ. ພິມ	098302260628	
16	ທ. ພິມ	ທ. ພິມ	ທ. ພິມ		ທ. ພິມ
17	ທ. ພິມ	ທ. ພິມ	ທ. ພິມ		ທ. ພິມ

ລາຍຊື່ຜູ້ເຂົ້າຮ່ວມຝຶກສືບຕໍ່ກ່ຽວກັບເຕັກນິກການກໍ່ສ້າງ ແລະ ການຊົມລອງນໍາໃຊ້ເຕົ້າແກັບຊີວະພາບລະດັບ 2 (ລຳດັບວິຊາການ) ທີ່ແຂວງອຸດົມໄຊ

List of participants of training on Biogas construction, how to operation and maintenance level 2 in Oudomxay Province

18	ທິນທິນ ສິມສິມ	ວິທະຍາໄລ	ສາມັນ ກິນ	62.97.19	ສິມສິມ
19	ສິມສິມ ສິມສິມ	ສິມສິມ	ສິມສິມ ສິມສິມ	72.63.55.2	ສິມສິມ
20	ສິມສິມ ສິມສິມ	ສິມສິມ	ສິມສິມ ສິມສິມ		ສິມສິມ
21					
22					
23					

ຢັ້ງຢືນໂຕນ/Certified by: 

ວັນທີ/Date: 4/1/109  
 ຈຸດ/Trainer: 

**4.6 Contact Data**

As Course 3 Level 9 is a continuation of previous training, the contact list for Course 2 Level 4 is valid for this training session.

**4.7 Photos**

**Groups for the Construction of 8 Biogas Plants**

**Group 01.**



**Group 02.**



**Group 03.**



**Group 04.**



**Group 05.**



**Group 06.**



**Group 07.**



**Group 08.**



## Pictures of Training Course 3 in Mai Village on Biogas Plant Building

