



CAP REDEO Workshop Report

(D4a / Laos)

Provincial Workshop on Bottlenecks and Potential Interventions for Rural Electrification – from Planning to Implementation

Lao Institute for Renewable Energy

LIRE

**CAP REDEO – Workshop
Report**

Thongsanti B. Vongsaly

Vientiane

August 2009

About LIRE

LIRE is a non-profit organisation dedicated to the sustainable development of a self sufficient renewable energy sector in the Lao PDR. The institute offers agronomical, technological and socio-economic research services, and works to provide a free public resource of information and advice on the use of renewable energy technologies in the Lao PDR. LIRE strives to support the development of the country by exploring commercially viable means to establish renewable energy technologies in rural parts of the country, in areas without connection to the national grid and with little access to technical expertise.

© Lao Institute for Renewable Energy (LIRE)

ສູນຄົ້ນຄ້ວາ - ທົດລອງດ້ານພະລັງງານທົດແທນ

*Sokpaluang Road,
Sokpaluang village, Vientiane, Lao PDR
P.O. Box 8010*

*Tel: +856 21 353 430. Fax: +856 21 314 045.
Email address: contact@lao-ire.org.
Web-site: www.lao-ire.org*

Table of contents

Introduction	1
1 Objectives of the workshop	2
2 Outcomes of discussion	2
3 Workshop’s closure.....	6
Annex 1: List of Participants.....	7
Annex 2: Workshop Agenda.....	9
Annex 3: Terms of Reference.....	10
Annex 4: Presentation Slides by Jaap de Winter	17
Annex 5: Presentation Slides by Tamara Flink	18
Annex 6: Presentation Slides by Thongsanti B. Vongsaly (Bottlenecks)	22
Annex 7: Presentation Slides by Thongsanti B. Vongsaly (Policy).....	25

Acronyms

CAP REDEO	Capacity and Institutional Strengthening for Rural Electrification and Development
EASE	Enabling Access to Sustainable Energy
ECI	Electrical Construction and Installation Enterprise
EDL	Electricité du Laos
IED	Innovation Energie Développement
LIRE	Lao Institute for Renewable Energy
PAFO	Provincial Agriculture and Forestry Office
PDEM	Provincial Department of Energy and Mines

Introduction

The overall objective of the CAP REDEO project in Laos and Cambodia is to improve the impact of rural electrification on sustainable development and poverty alleviation by establishing effective cross-sectoral investment and planning capacities and instruments using Geographical Information Systems as the convening factor. The ultimate objective of the present action is that the developed tools provide the required tangible elements for the formulation of appropriate policies and instruments to reach the goal of implementation.

The workshop was held on the 22nd of July 2009 at the Provincial Department of Energy and Mines (PDEM) in Thakhek, Khammouane province.

Prior the workshop, a stakeholders' consultation was conducted by LIRE. The main relevant actors were interviewed in order to discuss the rural electrification options which have been developed by the CAP REDEO project over the last two years 2007-2009 and to discuss the current rural electrification situation. The parties with potential to carry out the rural electrification (RE) projects represented a fraction of formal and informal entrepreneurs with the potential to upscale or disseminate their energy services and products to rural areas.

The workshop was requested by ETC Foundation in the Netherlands who assigned LIRE to coordinate, together with the Provincial Department of Energy and Mines (PDEM) in Khammouane Province the meeting arrangements, including invitation of participants. On this occasion, the workshop was chaired by the Director of Provincial Department, Mr. Bounta Buasavanh. The event was attended by participants from both public and private sectors (see List of Participants in Annex 1). Four presentations were given (see annexes 4 to 5) by the following representatives:

Name	Organisation
Mr. Jaap de Winter	ETC
Ms. Tamara Flink	ETC
Thongsanti B. Vongsaly	LIRE (Facilitator)
Aurelie Phimmasone	LIRE

The meeting started at 9:00 a.m. and ended at 4:30 p.m. on the same day (see Agenda in Annex 2).

1 Objectives of the workshop

The main objective of the workshop was to present the results and findings of the stakeholder profiling and consultation and to officially close ETC's work on CAPREDEO at provincial level. Moreover important stakeholders in the renewable energy sector participated in a discussion round about bottlenecks, opportunities and future prospects about renewable energies. The specific objectives are listed in the table below.

No.	Objective
1	Present background of ETC and its programmes including CAPREDEO
2	Present institutional capacity for implementation based on stakeholders profiling
3	Present results of the stakeholders consultation for CAP REDEO
4	Discuss bottlenecks, opportunities and future in order to improve the implementation of rural electrification plans

2 Outcomes of discussion

The workshop included two sessions for discussion. This section presents the points of discussion by the participants on the main raised issues.

Is the current development of the electrification rate fast enough for reaching the electrification target at provincial level by 2015?

PDEM briefly described the general situation of the rural electrification in Khammouane province. The PDEM confirmed that 70%, 85% and 90% of total households will be electrified in 2010, 2015, and 2020, respectively and nowadays all nine districts in Khammouane province receive electricity, but around 70-80% of total villages in these districts have access to electricity. Rural Electrification Projects now cover 7 provinces, specifically in the southern part of the country. It was explained further by the Director of ECI in Khammouane that the government has paid attention to rural electrification mainly through the existence of REP 1 and REP 2 (through World Bank funding) that illustrate the government's commitment towards the above mentioned achievements. Furthermore, the government also has a project named "Power to the Poor" in order to increase the number of households with access to the national grid. The project is undertaken by EDL and is funded by the World Bank. It aims at helping those

poor households not yet connected to the grid but living near or below the grid by providing them a loan voucher of not more than 700,000 Kip to be able to pay for the grid connection fee. The loan needs to be paid back within a 35 month period. This project aims at reaching 677 households. To date in July 2009, this project manages to support 239 households. In short, the Director of ECI sees no problem to fulfil the electrification target by 2015.

How can the private sector be encouraged to get more actively involved in rural electrification projects?

There are four solutions as suggested by PDEM:

- 1) One of them is that there should be cooperation between the two sectors, international organizations and government.
- 2) The second one relates to possibility to get financial assistance from the government (subsidies).
- 3) Furthermore, more specific policies which can attract more financial assistance are highly required and need to be developed.
- 4) Finally, it is related to the means to do this. For the main grid, the fund should be from public budget, loan, and existing fund within the province, or international organization in form of grant, and people contribution.

Should the provincial policy framework be improved in order to reach the target and involve more private sector players?

Mr. Bounta Buahsavang re-mentioned that the recent National Plenary Session of the National Assembly has approved the policies concerning the approval of hydropower projects. PDEMs, in charge of the large provinces, now have the authorization to approve a hydro projects with private sector involvement with a capacity under 5 MW or that costs less than 5 million dollars. For smaller provinces, PDEM can approve hydro power projects under 3 MW. However, prior to the approval, the Provincial Department of Energy and Mines in both large and small provinces would need to send the plan to the national level, within the Ministry of Energy and Mines, for comments and approval. Mr. Bounta asserted further that this policy is not practical since the cost for building one megawatt hydro project, will be approximately 2 million US dollars depending on the site. This means that a 5 MW hydro project will cost no less than ten million dollars which enters in contradiction with the policy statement. This is supposed to be revised. He commented further that there should be more policy framework specifying what the private actors could do and to which extent. Also, there should be a facilitation of loan access for private companies. This can be in a form of policy or regulation to lower bank interest rates.

Bottlenecks in hydropower and biomass:

The results of the interviews with key stakeholders at provincial level provided a good overview of the main bottlenecks that limit the development of the rural electrification within the country. Those issues were presented in the afternoon session to the participants for further discussion (see Annex 6).

First of all, the participants pointed out that they are much more familiar with the hydropower energy system than the other ones such as the solar energy, biomass gasification and also biogas.

Bottlenecks on hydropower:

Considering the hydropower energy, the main identified bottlenecks are:

- Technical-economic: high investment costs, high technical skills for operation and maintenance, and risks of expensive repair costs.
- Acceptance: The possible negative impacts on the natural protected areas and on the social and economic livelihoods of the possible affected persons constitute other major concerns.
- Viability: The main identified challenge here is to match the power supply to the local energy demand that can be very low.

Bottlenecks on solar energy:

The solar energy was briefly discussed just to mention that it is very difficult to manage to collect the monthly bills from households provided with SHS systems. The reason advocated for this is that the practised electricity prices are higher than the national grid price, which makes it difficult for some people to pay. Moreover, people living in rural areas would prefer to pay the same price for electricity as those people connected to the grid. Several complaints are then expressed to PDEM/DDEM staff.

Bottlenecks on biomass:

The main bottlenecks for implementing biomass gasification systems reside in the operational scheme and financial costs:

- The biomass supply is unsecure due to unstable supplies of feedstock materials that limit the impact of the system to be used for rural electrification,
- Operating this system requires high investment and transportation costs.

Participants recognized a general lack of knowledge on biomass as it is a new technology. The person representative of the PAFO said to make often confusion between biomass and biogas energies. Another participant said to be concern about the possible pollutions caused by the smokes from the gasifier. Hence, more information on this technology is highly demanded, about pros and cons, about inputs and expected outputs.

The most important bottlenecks for hydropower and biomass as identified by the participants were the following

- Lack of detailed feasibility studies
- Unsecure economic profitability - long term investment

- No systematic integration of project plans into national & provincial development plans
- Staff rotation – high turnover of skilled persons
- Difficult logistics – some areas hard to reach due to low road accessibility
- Difficult payback of collection fees (monthly bills)
- Communications with local people (ethnic)
- Access to financial resources: Public expenditure or donors or local bank?

Proposed solutions:

In general, participants agreed on the solutions presented by LIRE (see Annex 6).

PDEM and BSP Company in particular emphasised the needs for: i) very detailed feasibility studies both on hydro and biomass potential, and on ii) training requirements. The major proposed solutions are identified as follow:

1. Conduction of detailed feasibility studies of the CAP REDEO plans (by the project owner) in order to find out if they are economically profitable and viable. It is also to compare the price of the electricity produced from hydro and from biomass
2. Conduction of a study on the potential for biomass gasification use in Khammouane province, with close follow up:
 - a. Mobilization of villagers (Extension service)
 - b. Presentation and explanation on Feasibilities and plans (objectives, implementation, production & sale plans) – *to whom: private sector? – where: in province and/or in Vientiane capital*
3. Develop a demonstration site for biomass in order to compare pros and cons of using rice husks or other feedstock materials for the agricultural production or for electricity purpose only
4. Capacity-building: Provision of information and training on both biomass and hydro, starting from A to Z - from basic understanding of techniques, management and implementation to more than one staff in each interested office to overcome possible staff turnover
5. Financial support: facilitate access to financial resources, thanks to:
 - a. Funding from the government
 - b. Fund from international donors
 - c. Government to be warrantor for private sector when applying for local bank loan
 - d. Government policies to lower interest rate for local bank loan
 - e. Joint venture with international company
6. Renewable Energies should be integrated into the current policy development with clear responsibilities and assigned resources






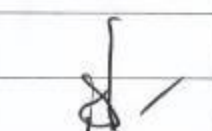
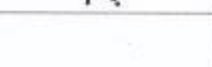
3 Workshop's closure

After presentations and discussions, Jaap de Winter summarized the points that were presented and discussed. He expressed his gratitude to all participants, especially PDEM. He also suggested that although the CAP REDEO project has come to an end, ETC hopes that there will be further cooperation with the government and LIRE through ETC EASE programme or Technical Training programme. The workshop was officially closed by Mr. Bounta Buasavang and ended at 4:30 p.m.

Annex 1: List of Participants

Registration

List of Participants for CAP DEREOWorkshop on 22 July 2009 at Khammoun province

#	Name	Organisation	Position	Signature	Phone Number
1	Mr. Bounta Bouasavang	Provincial Department of Energy and Mines	Director of PDEM		856-20 9855 908
2	Mr. Soulin	PDEM / Energy Section	Head of Section		856-20 5757 540
③	Mr. Phongsavath	EDL Province			
4	KHAM PHUANG Mr. Khamphone/12.	Provincial Agriculture and Forestry Service Office Department of Science and Technology	Director		5755650 55550747 / 55550565
⑤	Mr. Singkeo	Provincial Planning & Investment Commerce & Industry	Official Deputy Director		
6	Mr. Singuan Inthalath				(856) 20 5223315
7	Mr. Khongvaly Phetsamone				(856) 20 5651355
⑧	Mr. Khamphat Phetsoulin	Khamphat Off-grid Electrical Company (VOPS agent)	Director		856-20 5924 778
⑨	Phongphet Panyon	Houng Heuang Electricity, Construction and Installation	Director		8560-20 2322999
10	Mr. Khanthy VORABOUTH		Director		8560-20 2323000 2999
⑪	Mr. Viengkham	Dongxay company			



12	Mr. Anou Phouap Mr. Bounphone	BPN Construction and Installation		<i>Phouap</i>	020 5651188 856-20-5551 666
13	Mr. Bounlay Vongsay	BLE Construction and Installation		<i>→ 003</i>	856-20 5650 316
14	Mr. Khamphan	PSP Construction and Installation	Director	<i>Phouap</i>	856-20 5614 473
15	Mr. Souksavay	Mahaxay Chaleunsap Construction & Installation		<i>Phouap</i>	856-20 5369 000
16	Mr. Bounta Bounlasy	Khammouane Electronic Company	Director	<i>Bounta</i>	856-20 2163 573
17	Khouma Phomy PDEM			<i>Bounta</i>	856-20-75614
17	Mr KHOUNMA PHOMMYXAY		-		
18	Mrs KHAMPHOU PHETSAKHONE		-	<i>Phouap</i>	5754 880
19	Mrs KHONESY SATYAVONG		-	<i>Khonsy</i>	6189 666
20	Mr LAE NONHTHASONE		-	<i>Lae</i>	2172030

Annex 2: Workshop Agenda

Time	Activities	Remarks
09.00- 10.15	1. Welcome by representative of provincial government	Mr. Bounta Bouasavang, PDEM
	2. Objectives of the workshop, by CAP REDEO	Mr. Jaap de Winter, ETC
	3. Presentation on the policy and funding of the rural electricity sector: from planning to investment/implementation and operation	Mr. Thongsanti B.Vongsaly, LIRE
10.15- 10.30	<i>Tea / coffee break</i>	
10.30- 12.00	4. Presentation on the institutional capacity to develop and implement rural electricity projects	Ms. Tamara Flink, ETC
	5. Discussion: views on mobilizing local institutional capacity to reach energy policy and funding objectives?	Facilitator: Mr. Thongsanti B.Vongsaly, LIRE
12.00- 13.30	<i>Lunch break</i>	
13.00- 14.45	6. Presentation on bottlenecks and opportunities to develop the rural electricity sector	Mr. Thongsanti B.Vongsaly, LIRE
	7. Discussion on bottlenecks and opportunities to develop the rural electricity sector	Facilitator: Mr. Thongsanti B.Vongsaly, LIRE
14.45- 15.00	<i>Tea / coffee break</i>	
15.00- 16.00	8. Conclusions from the workshop	Mr. Jaap de Winter, ETC
	9. Closure of the workshop by representative of provincial government	Mr. Bounta Bouasavang, PDEM

Annex 3: Terms of Reference

TERMS OF REFERENCE

Background of the CAP REDEO Project

The proposed work is to be carried out as part of ETC's responsibilities in the CAP REDEO project (see www.cap-redeo.com).

The global objective of the CAP REDEO project in Laos and Cambodia is to improve the impact of rural electrification on sustainable development and poverty alleviation by establishing effective cross-sectoral investment and planning capacities and instruments using Geographical Information Systems as the convening factor. The ultimate objective of the present action is that the developed tools outputs provide the required tangible elements for the formulation of appropriate policies and instruments to reach this goal. Hence, the project will:

- Raise awareness among high level decision makers of the important role energy can play in poverty eradication, through fostering of multi-sectoral working groups;
- Strengthen local energy expertise of the central planners – Ministry, power utility, regulator and of local Provincial authorities in planning methods;
- Demonstrate the energy services for poverty reduction linkages through providing basic infrastructure services and affordable modern income generation opportunities;
- Develop an alternative planning approach for electricity service delivery by emphasizing the socio-economic impact of energy service extension, instead of only relying on technical-economic considerations.

In the short term, both countries will develop technical capacity and be endowed with hands on tools to direct investments and decide between off-grid and on-grid options, renewable or fossil fuel based off grid production – and priority areas from the perspective of maximizing development impact of scarce resources.

In the medium term, the regional plans will help to develop electrification projects, from which the local population will benefit. A more integrated approach will contribute to bring additional investments in the sector in synergy with the recently established Rural Electrification Fund in Cambodia. There are several possibilities for replication and extension of the project outcomes in the other Provinces of Cambodia and Laos and to other countries in the region.

This can only be achieved through a hands-on “learning by doing” approach wherein a focus group will be formed at the national level, and at the Provincial levels and will be hands on involved in implementing of the project. Specific training sessions at Provincial and National level will be organized. Regular meetings of the working groups as open workshops will ensure sharing of exchanges and ownership building.

The ETC activities within CAPREDEO receive co-financing from the ETC/MFS program.

The objective of the MFS Energy Access involvement and the toolset as developed under the EASE partnership is meant to contribute to the multi-stakeholder planning process and translate planning interactions from selected stakeholders into concrete action plans that lead to upscaling of energy provisions that will benefit the local poor.

The CAP REDEO consortium partners find it useful to understand the dynamics and development paths of already operating actors in the local energy provision business in the partner countries and the target provinces (Kampong Cham in Cambodia and Khammuan in Lao PDR).

These two provinces have been selected by the CAP REDEO project partners because most available modern energy technologies of the respective countries are represented in the provinces. Moreover, statistical data to run the CAP REDEO planning model are available with both the national and provincial level authorities for the two target provinces.

Further the project members of the CAP REDEO team think that energy planning impact is highest when local actors are taken into account in energy planning, and find it important to give these people a 'face'.

The MFS Energy Access involvement aims to give insight in the more qualitative understanding of the sector through profiles of national, provincial and local planners and policymakers, energy businesses and energy end-users in rural Laos and Cambodia.

Ultimately, the involvement of the MFS Energy Access program in the CAP REDEO planning work will give local planners and practitioners a starting point to define projects that are in line with the MFS Energy access and EASE mandate. Within this MFS Energy program small scale activities that contribute to capacity building of local practitioners are eligible for funding. These projects can thus prepare the road for larger scale infrastructure investments.

For the MFS Energy Access program the geographic scope of activities is not limited to the two selected provinces and therefore potential future follow up project proposals are not limited to Kampong Cham and/or Khammouan province.

Explanation of the proposed work

The assignment described in this TOR, is part of the last activities ETC will carry out under the CAP REDEO project, which is coming to a close in 2009.

The assignment is divided in two parts:

1. *Energy sector stakeholder consultation*
2. *Preparation of a provincial level workshop (combined with training) and a national level seminar*

1. *Energy sector stakeholder consultation*

This activity aims to bring together relevant stakeholders in order for them to discuss the rural electrification options which have been developed by the CAP REDEO project over the last two years. Aim is to include both the people responsible for planning the rural electrification in (governmental) institutions, as well as (private) partners with the potential to implement RE projects. The parties with potential to carry out the RE projects should be a mix between formal and informal entrepreneurs with the potential to upscale and/ or disseminate their energy services and products to rural areas. Or –in other words- a mix of licensed Rural Energy Enterprises (REEs), unlicensed REEs, project developers and innovative technology providers.

This consultation round is not meant to replicate the workshop already carried out by IED, but to take that as a starting point for discussion about future interventions and the necessities to make

these a reality. A complementary list of stakeholders that gather representatives of the sector (MEM/PDEM, EDL, private, bilateral agencies, INGOs) will be proposed by the consultant for submission to ETC for approval.

The stakeholders should be involved to discuss potential interventions in the perspective of the scenarios made by IED and the project partners and to identify related headlines for investment. The intention is to get a better understanding of the perception of these scenarios, their bottlenecks and potential interventions as solution to reach more poor people with electricity.

Further, the consultant will be challenged to present (and document) a common understanding of these views per hypothesis/question¹. Finally, the consultant is requested to present (and document) potential project interventions to contribute to solve these questions as project proposals.

This means that the consultant will include the following tasks to structure this part of the assignment:

- 1) Make an inventory of views on the feasibility of presented rural electrification plans.
- 2) List the bottlenecks which have been identified
- 3) Discuss the plans and identified bottlenecks with a variety of stakeholders
- 4) Discuss potential project interventions that might contribute to solving the bottleneck.
- 5) Make a report of the above findings which will serve as input for both the provincial and national workshops.

2. Preparation of the provincial level workshop and national seminar

This activity consists of two activities which have been put together for efficiency and effectiveness. First component is that ETC wants to organize a training on 'Participatory planning and formulation/ validation of investment plans' that is to be based on inputs developed by the consultant during the first main activity of stakeholders' consultation. Second component is that ETC prepares to officially close its work on the CAP REDEO project in each country and would like to present the results to all stakeholders. The consultant and ETC will work closely together on the preparation of these provincial training session / workshop and national seminar.

As ETC wishes to keep the provincial dimension of the project, ETC has decided to organize the two workshops separately. First the workshop / training sessions is to be conducted in the province of Khammouan and is planned to last between one and one and half days (1.0 - 1.5 days). The second as a final national seminar will be held in Vientiane capital during a half day (0.5 day) event. These two events will take place during the same week with approximately two days in between in order to give enough time for the preparation of the final seminar based on the outcomes of the provincial workshop.

The task of the consultant is to organize these days, including both the logistics as well as the content. The training / provincial level workshop will be a direct follow up on the earlier preparatory work done by the consultant.

The provincial level workshop can be considered as the last part of the 'stakeholder consultation assignment'. The final national seminar will present all results of the earlier work to the stakeholders present, and a discussion will be facilitated to get additional opinions on the findings.

¹ Reference is made to the ETC MFS EASE CAP REDEO work plan 2008.

As this provincial workshop has direct links with the final seminar at national level, it is therefore expected that some institutional participants at the provincial level workshop will be invited to the national seminar.

The consultant will be responsible for documenting the discussions during these two events in a final report.

The planning is that these workshops will be held in early July 2009.

All activities will be carried out in close consultation with the ETC CAP REDEO team in the Netherlands (see 'Team'). Two persons of ETC will travel to Laos to contribute to the preparation and implementation of both workshop and seminar and to support the consultant.

Transversal values

ETC's Energy Access team aims to provide poor people with sustainable access to energy, through the support of independent rural energy entrepreneurs who are willing to upscale their energy products and services to poor people in rural areas.

ETC's Energy Access team works with a gender focused approach, with both men and women, young and old entrepreneurs.

Objective of the work

The objectives of the two sub assignments are as follows

For 1. Energy sector stakeholder consultation, the objective is to consult stakeholders; address, discuss and find answers to the following questions:

1. What are their perceptions on the CAP REDEO rural electrification plans
2. What are bottlenecks/ problems they foresee in implementation of these plans
3. What are their recommendations to smoothen implementation/ take away the identified bottlenecks
4. What are requirements still needed for successful implementation (*think of technical assistance/ capacity building/ financial support/ etc.*)

For 2. Training and (provincial level) workshop and final seminar, the objectives are:

1. To develop a completed report with all stakeholders' (both the government and implementers) views on the rural electrification plans
2. To present, discuss and preferably get consensus about follow-up of rural electrification activities.

Activities to be carried out

For 1. Energy sector stakeholder consultation

1. Interviews with stakeholders: individual meetings will be organized and documented (in Lao Language only).
2. Write up of results of the meetings (into Lao language only).
3. Preparation of a stakeholder views document as input to the provincial workshop/national seminar (into English language).

For 2. Training and (provincial level) workshop and final seminar

1. Preparation of training/ workshop day (both content wise and logistically)
2. Active participation (together with ETC representative) by leading the provincial training/ workshop and national seminar.
3. Elaborate reports of the provincial workshop and national seminar (in Lao language, with a summary in English).
4. Preparation of deliverable D3E with ETC representative.

Methodology

ETC's Energy Access team believes in active consultation of relevant stakeholders.

In this case relevant stakeholders for rural electrification will be the main experts to comment on the prepared rural electrification plans. They will be the people who will eventually have to cooperate to carry out and implement the plans, therefore ETC believes in a process whereby these stakeholders get to know each other, if they don't already, and have a chance to discuss about the proposed plans.

The consultant, together with the ETC representative, will be the facilitator of these discussions. He/she will organize the discussions to take place, and moderates them. The consultant's task is to hear all relevant stakeholders, document their opinions and present them in an objective manner during the training/ workshop days in July 2009.

Team

The consultant will work independently in the country (either LAO PDR or CAMBODIA), yet stay in close contact with the ETC CAP REDEO team in the Netherlands, who will closely follow and monitor the work.

Two ETC representatives will come to Lao PDR and Cambodia in July 2009 to analyze and discuss the results of the assignment with the consultant and the local stakeholders. The ETC representative will also –together with the consultant- lead the training and provincial level workshop on participatory planning and formulation/ validation of the investment plans at the final seminar.

Output/ production

For 1. Energy sector stakeholder facilitation, the output is

- A network of energy entrepreneurs, NGOs and local government agencies with the potential to provide sustainable access to modern energy in rural areas in Lao PDR/ Cambodia.
- The establishment of personal contacts between different stakeholders: government representatives, (private) entrepreneurs, NGOs and potential investors (Banks/ government/ private parties).
- A written report which presents the outcome of the discussions about the vision/ opinion of the individual consulted stakeholders on the feasibility of the rural electrification plans, the expected bottlenecks, the presented solutions, and the requirements still to be satisfied for successful implementation of the plans.

For 2. Training and provincial level workshop, the output is

- All relevant parties invited and participating in the training/workshop
- All practical arrangements taken care of (venue, catering, planning of presentations, hotel where necessary, per diems, other logistics)
- Content of presentations prepared in consultation with ETC
- Presence (leadership and active participation) at the training/ workshop and seminar
- A written document in English language on the outcome of the provincial workshop 'Participatory planning and formulation/ validation of the investment plans'.
- A written summary in English language of the outcomes of the final seminar

Planning

Time period for the proposed activities is 15/05/2009 – 15/07/2009.

May 2009 can be taken to prepare, June 2009 for the stakeholder's consultation, and July 2009 for the workshops.

The provincial workshop is planned to take place early July 2009. The exact date is still to be determined.

The planning of both of the activities of the assignment will be done by the consultant. ETC will have to be informed and give approval before implementation takes place.

The potential follow up work (under a different contract, sees below under 'Follow-up') will be discussed after the final seminar day in July 2009.

Services

The consultant will independently arrange for transport, computer access, and printing of the required documents to facilitate his/her own work. These posts have been included as budget lines and can be declared, based upon real costs made and within the limits as expressed in the budget.

Information sources

- The consultant will communicate regularly with ETC CAP REDEO team in the Netherlands, and thus obtain information about project activities and objectives. ETC will provide insight into project documentation. Some documentation is to be found on the website www.cap-redeo.com
- All information gathered in this assignment is to be treated confidentially and is used by ETC to improve activities in the region. None of the obtained information should be used for non-ETC activities, unless specific permission has been given.
- The consultant will make available all background documentation he/she uses during the assignment, as well as the planned output.

Follow up

ETC will in due time decide which follow up will be given to proposed plans which result from this assignment.

There is potential for an extension of the consultant's contract for follow up of these activities with more work on the implementation of the proposed plans (a two month period between 01-08-2009 and 01-10-2009). This potential assignment is completely dependent on the quality of the work of the assignment presented in this TOR and the potential for follow-up activities, and the consultant will only be contracted for the follow up work if this present assignment is carried out to full satisfaction of the ETC CAP REDEO team.

ETC contacts:

First contact at ETC is Ms. Tamara Flink, t.flink@etcnl.nl, Tel 00 31 33 432 60 74 (office).

Second contact at ETC is Mr. Jaap de Winter, winter@etcnl.nl, Tel 00 31 33 432 60 25 (office).

Third contact at ETC is Mr. Frank van der Vleuten, fvleuten@etcnl.nl, Tel 00 31 33 432 60 25 (office).

The secretary is Mrs. Catrin Hohmann, c.hohmann@etcnl.nl, Tel 00 31 33 432 60 25.


Annex 4: Presentation Slides by Jaap de Winter

CAP REDEO
provincial workshop




Jaap de Winter winter@etcnl.nl

Introducing ETC



- Not-for-profit organization established in the Netherlands in 1975
- 71 employees (2007)
- 5 thematic units, including health, agriculture and energy
- ETC Annual Report 2007
- ISO 9001/2000 certified (December 2008)

ETC Energy




- 20 staff members
- 4 program teams:
 - Energy Access
 - Gender and Energy (ENERGIA network)
 - Technical Training
 - Adaptation to Climate Change
- ETC Energy brochure and website: www.etc-energy.org

CAP REDEO project (1)



- Capacity and institutional strengthening for rural electrification and development – decentralized options
- Funded by the European Commission through the Intelligent Energy Europe program
- Implemented by IED (France), ETC (Netherlands) and project partners in Laos and Cambodia
- Project period 3 years (2007-2009)
- Website: www.cap-redeo.com

CAP REDEO project (2)



- Innovative electricity planning project focusing on 'development potential' of rural areas using *Geosim*
- Main role of IED: develop electricity planning scenarios for Laos and Cambodia, using *Geosim*, including pilots in one province per country, and train electricity planners (2007-2008)
- Main role of ETC: stakeholder consultations on rural electricity planning (2007-2008), stakeholder consultations 'from planning to implementation' (2009)

Workshop objectives

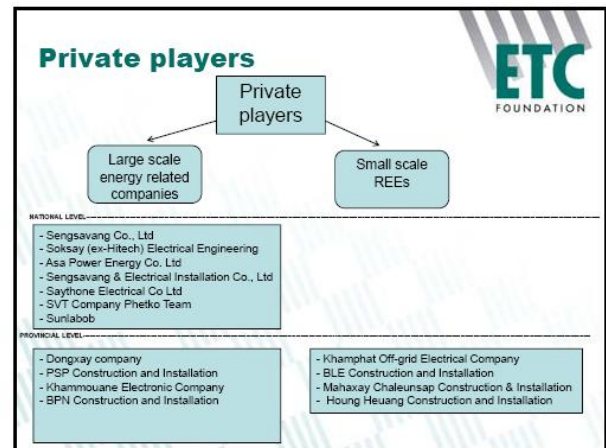
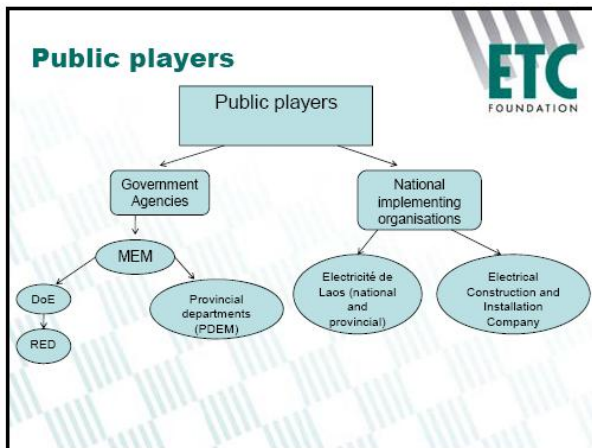


- To share findings of stakeholder consultations 'from planning to implementation' (bottlenecks, proposed interventions?) and obtain comments/feedback from participants
- To improve understanding of the role and bottlenecks of each stakeholder in rural electrification

CAP REDEO project ends...

...possible follow-up through Energy Access and Technical Training program of ETC

Annex 5: Presentation Slides by Tamara Flink



Role of each stakeholder for implementation

MEM (and DOE):

- preparing strategic power sector plans
- collect and process data about electricity generating potential
- prepare regulations regarding generation and transmission development
- prepare recommendations about tariff levels
- administer and inspect electricity enterprises.

DoE (Department of Electricity):

- strategic power planning
- project identification
- evaluation of IPP project proposal

Hydropower Division (within DoE):

- generation and transmission
- planning and development

RED (Rural Electrification Division)

- co-ordinates and implements projects (those not intended for main grid connection)
- Focus small-scale power systems including thermal, hydro, Biomass, etc. and dissemination of solar photovoltaic technology

Electricité du Laos (EDL):

- owns and operates the country's main generation, transmission and distribution assets.
- project development role
- implementing agency for hydropower projects.

National Committee for Energy (NCE)

- acts as a government's agency with power to manage the development and marketing of electricity for whole country to ensure effective implementation of strategic plans for energy
- It negotiates on behalf of the government concerning investments in power sector exports sales and contracts with project developers

PDEM and provincial EdL:

- responsible for the local planning and implementation of the rural electrification programs with a top-down approach
- PDEM plays an active role in prioritize the objective and locality at local level

Large scale energy related companies:

- PDEM works with a list of 10 private companies that help implement investment plans. These companies are in direct competition with ECI
- to react on calls for tenders published in newspapers commissioned by the Government through REP (Rural Electrification Programme) and NARP (Northern Area Rural Electrification Projects)
- Some companies generate, distribute and sell to the grid (Through PPAs).
- make use of local subcontractors (a.o small scale REEs) at district level and lower if required

Views on public players

Different government views on public players:

- Approval of infrastructural plan to improve and expand rural electrification, starting in areas close to urban centers (Party Conference number 8)
- Approval and administration of REF
- Policy maker
- to give money to support advertisement for rural electrification.

Different views from the private sector on public players:

- A coordinating centre with clear rules and regulations which also has an advisory function should be set up
- a government able to support and provide a framework for the private side to operate is necessary

Views on national level private players

Different government views on national level private players:

- Possible privatization of EDL which is now a state enterprise
- ECI's role in rural electrification is linked to implementation: installation of low, medium and high voltage lines.
- Large private companies are mainly involved in installation and transmission

Different views from the private sector on national level private players:

- private players should be service providers that sell electricity and maintain the energy systems and fixed assets and capacity building should be done by the public players.
- more involvement and mechanisms should be installed to support the private sector
- support is needed for a legal framework and in finance

Views on local private players

Different government views on local private players:

- Entrepreneurs play an important role at provincial level, PDEM has a list of 10 companies that have implementing capacity
- provincial companies work in a mother and child relation with local entrepreneurs, local entrepreneurs are in the position to install electricity themselves and be involved in distribution besides installation and transmission
- Permission to invest in generation, as long as the capacity installed is not more than 2 MW
- Local entrepreneurs should expand their grids

Different views from the private sector on local private players:

- 100% private players cannot install HV lines and have to respond to tenders in newspapers
- Main problem is the low set tariff price for electricity, which makes it unprofitable to invest

Points for further discussion

- At this pace of electrification will we reach the electrification target at provincial level in 2015?
- What can be done to have a larger involvement of the private sector players in rural electrification?
- Should the provincial policy framework be improved in order to reach the target and involve more private sector players?

Thank you for your attention




Extra information www.cap-redeo.com

Annex 6: Presentation Slides by Thongsanti B. Vongsaly (Bottlenecks)


Welcome to ETC – LIRE Workshop
Bottlenecks and Potential Interventions for
Rural Electrification -
from Planning to Implementation
Thakhek 22nd July 2009

Presented By: Mr. Thongsanti B. VONGSALY
thongsanti@lao-ire.org





Presentation Outline

1. Introduction to assignment
2. Perception on the CAP REDEO Rural Electrification Plans
3. Bottlenecks for Hydro
4. Bottlenecks for Biomass
5. Bottlenecks for Hydro & Biomass (Transversal)
6. Requirement for Successful Implementation
7. Other Recommendations by Stakeholders
8. LIRE Proposal for discussion: Informed Choice
9. Open for Discussion




LIRE – ETC Workshop on CAP REDEO
Project




1. Introduction to Assignment

1. Objectives
 1. Consult the Energy Sector Stakeholders – public and private (second round of meetings)
 2. Address the bottlenecks foreseen
 3. Discuss requirements and find answers to support the implementation of plans and provide better energy access in rural areas
2. Methodology
 1. Consultation period: 22 to 25 June 2009
 2. Compilation of the views of the stakeholders: 1 to 15 July 2009
 3. Presentation of results to the consulted persons: 22 July 2009




LIRE – ETC Workshop on CAP REDEO
Project




2. Perception on the CAP REDEO Rural Electrification Plans

- All unaware of the plans
- Understood as practical exercise for capacity building
- Low interested by investors
- Biomass is not really a good idea
- Nakay District is almost electrified, no or small needs for further electrification
- Boualapha District needs more power. 60 MW plant to be installed at Xeneua River
- Not yet been integrated into **National Rural Electrification Plan**




LIRE – ETC Workshop on CAP REDEO
Project




3. Bottlenecks for Hydro

- Matching energy demand with potential
 - Some hydro systems supply may exceed local demand
 - Low demand versus high supply is not economically viable for private investors
 - High initial investment costs
- Sustainability
 - Impact on conservative areas, biodiversity and lives of local people
 - Local operation and maintenance (can require high technical capacity)
 - Risks of high repair costs for some components that are not initially funded (e.g. governor, civil works)




LIRE – ETC Workshop on CAP REDEO
Project




4. Bottlenecks for Biomass

- Unsecure Biomass supply
 - Many small rice mills which doesn't operate the whole year
 - Most of the medium-large scale rice mills are connected to the grid
 - Dependency of the gasification operator from biomass suppliers
- Limitations for rural electrification
 - Limited electricity consumption



LIRE – ETC Workshop on CAP REDEO
Project



4. Bottlenecks for Biomass (Cont.)

- Operating the gasifier on a small load demands more Biomass for electricity production
- Gasifier should be operated with stable load (e.g. irrigation purposes)
- Unstable supplies of feedstock materials
- Operational limitations
 - Highly skilled technicians with full commitment is required
 - High investment and transportation costs and low revenues due to low price expectations (heavily subsidized electricity tariffs)



LIRE – ETC Workshop on CAP REDEO Project



7

5. Bottlenecks for hydro & biomass (transversal)

- Lack of detailed feasibility studies
- Unsecure economic feasibility - long term investment
- No systematic integration of project plans into national & provincial development plans
- Staff rotation – high turnover of skilled persons
- Difficult Logistics – some areas hard to reach due to low road accessibility
- Difficult payback of collection fees (monthly bills)
- Communications with local people (ethnic)
- Access to financial resources: Public expenditure or donors or local bank?



LIRE – ETC Workshop on CAP REDEO Project



8

6. Requirements for successful implementation

- Technical Assistance
 - Feasibility study by project owner
 - Mobilization of villagers (Extension service)
 - Presentation and explanation on Feasibilities and plans (objectives, implementation, production & sale plans) – *to whom; private sector? – where: in province and/or in Vientiane capital*
- Capacity Building
 - Biomass Training
 - Village participation



LIRE – ETC Workshop on CAP REDEO Project



9

6. Requirements for successful implementation (Cont.)

- Financial Support – facilitate access to financial resources
 - Funding from the govt
 - Fund from international donors
 - Govt to be warrantor for private sector when applying for local bank loan
 - Govt policies to lower interest rate for local bank loan
 - Joint venture with international company
 - Access to micro finance



LIRE – ETC Workshop on CAP REDEO Project



10

7. Other Recommendations by stakeholders

- Feedstock materials like rice husks should be allocated for renewable energy purpose only (for biomass projects)
- Renewable Energies should be integrated into the current policy development
- Clear responsibilities and assigned resources



LIRE – ETC Workshop on CAP REDEO Project



11

8. LIRE Proposal: Informed choice for renewable energy

- Objectives:
 - Tackle information bottleneck
 - Increase rate of access to energy by speeding up assessment and planning stages
 - Equip communities and SMEs to review their energy needs and local resources
 - Enable communities/SMEs to choose appropriate (affordable) energy solutions, and then know who to contact



LIRE – ETC Workshop on CAP REDEO Project



12

8. LIRE Proposal: Informed choice for renewable energy (Cont.)

- Short list viable potential sites for private investors – saving time and money
- *Concept:*
 - Informational document guiding end-users and stakeholders for decision making
 - Energy Demand-Based Approach
 - Consider energy use and not just electricity (e.g. lighting and cooking)



LIRE – ETC Workshop on CAP REDEO Project



13

8. LIRE Proposal: Informed choice for renewable energy (Cont.)

- *Dissemination:*
 - Extension service approach – for example based on **Lao Extension for Agriculture Project 'NICE' approach**



LIRE – ETC Workshop on CAP REDEO Project



14

9. Open for discussion

- *Discussion Items*
 - Content – e.g. legal, financial, technical
 - Target group – communities, SMEs, DDEM field technicians
 - Format – leaflet, radio campaign, road show
 - Implementation agency – coordination with hardware suppliers, construction and installation companies



LIRE – ETC Workshop on CAP REDEO Project




15

Annex 7: Presentation Slides by Thongsanti B. Vongsaly (Policy)


**Welcome to LIRE – ETC Workshop
Bottlenecks and Potential
Interventions for Rural Electrification -
from Planning to Implementation -
Thakek 22nd July 2009**

Presented By: Mr. Thongsanti B. VONGSALY
thongsanti@lao-ire.org



Presentation Outline

1. Background of Laos PDR
2. Legal & Institutional Framework in Energy Sector
3. Institutional Arrangement
4. Energy Policy and rural electrification strategies
5. Rural electrification situation in Laos
6. Rural electrification programs
7. Rural Electrification Situation in Khammouane Province
8. Planning and Implementation




LIRE – ETC Workshop on CAP REDEO Project 2

Source: ASEAN secretariat.

1. Background of Laos

Selected key socio-economic indicators, year 2006		
Total land area	thousand km ²	236 800
Total population	thousand	6 135
Population density	persons per km ²	26
Annual population growth	percent	2.5
GDP product (at current prices)	US\$ million	3527.4
Gross domestic product/capita	US\$	436,2 574.9
Growth rate of GDP, constant prices	percent per year	5.6

Source: ASEAN secretariat.



LIRE – ETC Workshop on CAP REDEO Project 3

2. Legal & Institutional Framework in Energy Sector

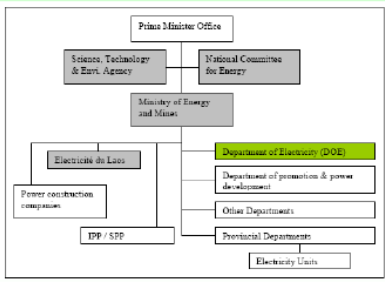

Legal & Institutional Framework

- Electricity Law – 1997
 - Production of Electricity Promotion & Expansion
 - Protect Right & Interest of Investors & Consumers
 - Environment Protection
- Environment Law - 1999



LIRE – ETC Workshop on CAP REDEO Project 4

3 Institutional Arrangement





LIRE – ETC Workshop on CAP REDEO Project 5

4. Energy Policy and rural electrification strategies

Energy Policy & Rural Electrification Strategies

- Maintain & expand an affordable reliable and sustainable electricity supply;
- Power generation for exportation promotion – national income
- Develop and enhance the legal and regulatory framework
- To achieve 70% in 2010 and 90% by 2020 – Access to electricity



LIRE – ETC Workshop on CAP REDEO Project 6

5. Rural electrification situation in Laos

Year	Total			Electrified					
	District	Villages	Households	District	%	villages	%	Hh	%
2000	142	11203	818 008	119	83.8	2651	23.5	293 495	35.9
2001	142	11231	866 277	116	81.7	2811	25.0	303 690	35.1
2002	142	11118	879 774	125	88.0	3345	29.2	340 550	38.6
2003	142	10566	882 466	129	90.1	3776	25.7	379 109	42.9
2004	141	10781	830 982	127	90.1	4229	39.2	437 648	47.0
2005	141	10552	959 595	129	91.5	4229	40.1	441 827	46.0
2006	141	10587	923 019	125	89	4256	40	504 000	54
Of which									
- EDL				103		3897		465 988	
- Provincial authorities				22		359		38 012	

Source: DOE/MEM & EDL



LIRE – ETC Workshop on CAP REDEO Project



7

6. Rural electrification programs

- REPI 2006-2009 funded by WB, ADB, JICA:
 - Off Grid: 10.000 households in remote area villages;
 - Rural Electrification Fund - DOE
 - Grid Extension - EDL: 7 Provinces in central and Southern part; PTD2 Project for Northern provinces
- Other programmes:
 - Promotion of Rural Electrification.
 - Pilot Hybrid System (PV+S/Hydro + Biomass);



LIRE – ETC Workshop on CAP REDEO Project



8

6. Rural electrification programs (Cont.)

- Promotion of Small Hydro Project (SHP) for SIPP
- Village Off-Grid Promotion and Support (VOPS) 2005-2008:
 - 17 Provinces in isolated villages;
 - Target number of about 10,000 HHs, about 0.37 MWs during the REP1;
- Small Hydro Power Projects
 - Pre-Feasibility Study the best 11 Sites
 - 2 SHP - PPA signed with EdL
 - Some SHP - MOU signed with GOL by private investors.



LIRE – ETC Workshop on CAP REDEO Project



9

7. Rural Electrification Situation in Khammouane Province

- Projection:
 - 80% by main grid by 2015
 - 20% by off grid by 2015
- Current Situation of Grid Expansion
 - Number of Districts: 9
 - Number of Villages: 805
 - Number of Villages electrified: more than 500 Villages



LIRE – ETC Workshop on CAP REDEO Project



10

7. Rural Electrification Situation in Khammouane Province (Cont.)

- Off – Grid By VOPS
 - Nakay: about 300 sets of Solar Home Systems – 100 of these installed
 - Mahaxay: 435 sets
- Vang Chang Village Small Hydro Dam:
 - Location: Nakay District
 - Capacity: 10 kW
 - Fund: NT2 Project
 - Purpose: Serve Potential Affected Persons by NT2 Project



LIRE – ETC Workshop on CAP REDEO Project



11

7. Rural Electrification Situation in Khammouane Province (Cont.)

- Medium hydro project
 - Location: Xeneua in Bualapha District
 - Capacity: 60 MW
 - Purpose: Mining, local electricity & irrigation
- Mega Project – Nam Theun 2 Hydroelectric Project
 - Location: Nakay District
 - Capacity: 1088 MW
 - Purpose: Exportation of national income generation and some for local use



LIRE – ETC Workshop on CAP REDEO Project



12

8. Planning and Implementation

- Responsibility
 - Local Authority 2 MW
 - PDEM: integrate plans submit from local authority to Socio Economic Plan of the Province then submit to DOE?
 - Role of EDL: price agreement and buy electricity from power producers.



LIRE – ETC Workshop on CAP REDEO
Project

13

