

# Capacity & institutional strengthening for rural electrification and development - Decentralised Energy Option (CAP-REDEO)

Supported by the European Commission through the Intelligent Energy Europe Agency (IEEA) and French Ministry of Foreign Affairs (MAE)

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## Newsletter No. 6

### Provincial workshop and stakeholder consultations: The case of Cambodia



**The Provincial Workshop in Kampong Cham organized by MIME**

Welcome to the sixth and last newsletter of the CAP-REDEO project. After 3 years of fruitful collaboration with CAP-REDEO stakeholders, the project's end finally arrived.

Previous newsletters informed readers about project activities and its implementation for 36 months. This special newsletter focuses on the last activities implemented by ETC, giving perspectives and recommendations for businesses in rural electrification areas in Cambodia and Laos but general conclusions and reports can be downloaded on the CAP-REDEO website.

<http://www.cap-redeo.com>



Coordinator: IED



Partner: ETC Energy

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Following the activities in Laos, ETC implemented a mission to Cambodia in July 2009 to start the national stakeholder consultations, visit the provincial and local stakeholders and meet with potential consultants to work on the follow-up activities.

The activities in Cambodia were organized somewhat differently than in Laos. At first, during the ETC mission, a field visit was made to the target province Kampong Cham and several key stakeholders at national level were interviewed to get more insight on the bottlenecks related to the implementation of planned electrification projects. Secondly, several local

consultants were contacted with the aim to work together with ETC on the stakeholder consultations and the provincial workshop in Kampong Cham

In November 2009 the provincial workshop took place successfully in combination with a stakeholder consultation in Kampong Cham. 45 people were present, including representatives from national institutions as well as local REEs and battery chargers. Different local stakeholders were able to give their opinion during parallel sessions. As a follow-up to the workshop consultations were conducted with the national stakeholders.

### 1. National and provincial bilateral meetings

During the ETC mission several interviews and meetings were held with national stakeholders, like EAC, EdC and MIME, provincial stakeholders like the provincial department and REEs and several battery chargers.

Some highlights from the conversations with national stakeholders are:

- The GEOSIM tool for electricity planning is particularly suited for governments, utilities and private enterprises at the provincial and local levels, due to a lack of tools and knowledge in the rural electrification field.
- Due to rotation of the involved staff, maintaining the built-up capacity on electricity planning within institutions is a challenge.
- All stakeholders mentioned the need for private sector

development in order to achieve the planned electrification rates.

- A clear policy to upgrade the REEs has been put in place. Between 2002 and 2004 REEs could obtain a license fairly easily, but step-by-step the criteria from EAC have become more stringent.
- EdC training centre and EAC continue to support licensed and unlicensed REEs, to improve their quality of services.
- The Director of Planning within EdC, mentioned the need of capacity building in renewable energy technologies within the Ministry and EDC. According to him this knowledge is necessary to assure electricity in off grid areas.

The provincial department explained that the provincial office was now responsible for all projects smaller than 125 kW. This means that licenses for REEs with a capacity lower than 125 kW can now be issued



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by the provincial department. However all licenses still need to be approved by EAC at national level.



He also mentioned that the registration and responsibility for the battery chargers has been decentralised. The community chiefs handle this but it is not always effective.

Three different REEs were spoken to during the fieldtrip. The main observations and comments are as follows:

- The REEs spoken to were in the process of improving their grids in order to start buying electricity from EdC.
- The REEs had some technical background, and relied on people in their network for specialized or larger reparations.
- Some REEs combined their diesel powered systems with a wood gasifier, to save on fuel costs. None of them functioned up to standards and as a consequence only saved little diesel fuel.
- Two out of the three REEs received a training organised by EdC while they were in Phnom Penh.

Finally three battery chargers were interviewed. All of them had a fixed price list which differed slightly from

each other. They know their customers and sometimes allow them to pay later – give the price level? The administration was very basic. Most of them had either basic technical skills or could contact a technician from the neighbourhood in case of break-downs of the generator. All of them had contacts with a gasoline supplier who comes when called by telephone.

Batteries are bought at the local market and last between one and two years. People come to charge their battery on average every 5 to 7 days.



Households use their battery mainly for lighting and watching television. Not all villagers have the means to buy one. The number of batteries charged varied between 40 to 120 batteries and all took around 6 hours to charge. One battery charger is aware of solar power but finds this too expensive to buy. One other battery charger had broadened his scope and was renting out VCDs. All of them had registered themselves with the village chief.

The conclusions of these bilateral meetings were taken as input for the preparation of the workshop and further consultations.



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## 2. Provincial stakeholder meeting and stakeholder consultation in Kampong Cham

The provincial stakeholder consultation workshop took place on the 11<sup>th</sup> of November in Kampong Cham. The aim of the workshop was to bring the participants up-to-speed on the CAP REDEO program, and to identify and discuss the bottlenecks involved in planning and implementation of rural electrification with all stakeholders. The workshop started with presentations by MIME, on their national grid extension and power generation plan; EDC, on the medium voltage grid extension plans for Kampong Cham; EAC, on the number of licensed REEs in the province, showing that 8 REEs out of 26 licensees buy electricity provided by the medium voltage lines; Mr. Van Mansvelt, on renewable energy options for the province.

During the second part of the workshop the participants broke up into four different parallel sessions focussing on:

- EDC and role of REEs
- DIME and role of small REEs and battery charging stations
- Biomass gasification and electricity price
- Main barriers to connect rural areas



Based on the presentations and input from the discussions during the parallel sessions, several bottlenecks to achieve rural electrification were identified. The main bottlenecks that came out were the high investment costs for REEs, for upgrading and expanding their grids, as well as limited capacity on technical issues and 'managing the business'. Loans are difficult to obtain, the interest rates are high and the loan periods too short. Often households are not able to connect due to the high connection and in-house wiring costs; as a result REEs have less clients than expected. Many REEs mentioned the need for training, not only technical training but also to improve the way they run their business.

## 3. National stakeholder consultation

In the period after the provincial workshop national stakeholders were consulted. Several stakeholders were approached to find out how each institution deals with the 'from planning to implementation' bottlenecks. The reactions can be summarized as follows:

- SME Renewables has installed some 30 gasifiers at rice mills, using rice husk as a fuel, and three gasifiers at large REEs, using wood as a fuel, and they are satisfied. Rice mills selling



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- electricity to EDC would be an interesting idea, according to the director of SME Renewables. This would improve the load factor and the fuel is available: currently only one quarter of the available rice husk is being used.
- The World Bank advisor to EAC mentions the limited planning capacity in the main energy institutions. As investment funds of the government for electricity grids are limited, grid extension is mainly facilitated by donor funding or private investments. There is a great need for larger grid connections as this would lower the prices for the consumers. Secondly, EAC has a major challenge to deal with many small REEs that they need to coordinate and provide with licenses; scaling-up is thus a necessity.
  - EAC mentions that the biggest bottleneck is the cost of investment for REEs. To improve this, EAC can gradually reduce the tariffs, so that the REE can more easily earn back their investment costs. EAC's aim is to set one electricity price for all consumers, but as yet they need to consider a reasonable return for the investors.
  - Through an ESMAP/World Bank project REEs were trained in the past, which was a great success as some REEs managed to realise saving up to 20% immediately after the course. The World Bank has now allocated money for additional training of REEs through the REF (Rural Electrification Fund).

- Technical training of REEs to increase efficiency and improvement of management, maintenance and safety;
- Scope for use of the GEOSIM tool at provincial (e.g. EDC, DIME) and local level for electricity planning purposes;
- Support to battery charging stations to optimize their technical and business performance;
- Business start-up and innovation support for solar home systems and solar lanterns;
- Support of a feasibility study to analyze the feed-in potential of renewable energy resources including the utilization of biomass.

**For more information, please contact:**

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Finally several recommendations came out of the consultations and the workshop:



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