Vocational Technical Training for Cambodia and Laos rural electrification SMEs (VTCL)

Supported by the European Commission
through the EC – ASEAN Energy Facility

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The project **Vocational Technical Training for Cambodia and Laos rural electrification SMEs (VTCL)**
is supported by the European Commission through the EC – ASEAN Energy Facility
and covers period October 2005 –October 2007

Objectives

1. Improve affordability, quality, safety and sustainability of rural electricity in Cambodia & Laos.
2. Establish high quality vocational technical training courses specially designed for rural electricity operators in Laos & Cambodia on the subjects :
   - ❖ Business management for energy service companies
   - ❖ Generator types and fuel sources
   - ❖ Energy efficiency, technical standards and government licensing requirements
   - ❖ Diesel generator sizing, operation & maintenance
   - ❖ Design / maintenance of distribution network
   - ❖ Practical skills / techniques for O&M / Safety

Project partners

IED (Innovation Energie Development) – French engineering and consulting firm,
Project' Leader. www.ied-sa.fr
2. ETC / TTP – Technical Training Programme functioning within ETC Energy unit of the
ETC Foundation, Netherlands non-profit organisation.
www.etc-energy.org
3. ITC (Institut de Technologie du Cambodge) – High education institution in Cambodia under the Ministry of Education. www.itc.edu.kh
4. NUOL (National University of Laos) – High education institution in Laos under the Ministry of Education.
www.nuol.edu.la

Welcome to the third and the last newsletter of the VTCL project. Two previous newsletters have informed the reader about the project activities and its implementation during last 12 months. This special newsletter focuses on the final workshop, its achievements and the perspectives for vocational technical training in rural electrification in Cambodia and Laos.

1. Dissemination workshop and final meeting

Figure 1 : VTCL's delegations at the dissemination workshop in Cambodia.

The dissemination workshop was organized in Phnom Penh on 16 October 2006. About 20 delegations from MIME, EAC, EDC and REE [1] participated and made contributions to the workshop. The objective of this workshop is to:

- Review project's activities and its achievements
- Finalize development methodology and curriculum,
- Present the project's results, lessons learned, and its impacts for large public diffusion.
- Discuss perspectives for further development & cooperation

All project partners have attended this workshop and shared with the delegations present VTCL's status, activities, experiences and lesson learned for rural electrification in Cambodia and Laos.

Also, the project manager presented the following statements on VTCL's methodology and applications with the particular attention to:

- The identification of practical competencies of the target group members in focus group discussions should get attention on top of the outcomes of the survey results.
- The professional competencies of the teachers, involved in the REE courses for the fine-tuning of the REE course, should get further attention.
- The possibilities for putting the project's gained know-how in practice should be mapped out for the period beyond the project termination.
- It should be clear whether or not the delivery of courses to REEs is a commercial undertaking that makes the development of a business plan needed.
- It should be clear whether or not the delivery of courses to REEs can be easily absorbed by the involved institutions on top of all other activities.
- In the current project set-up sufficient opportunities to parties outside the project were offered to make their contribution to the development of the REE course.

At the end of workshop, the delegations discussed the Pilot training for REEs in Cambodia and in Laos – i.e. observations and recommendations for their implementation. These recommendations can be consulted in the partner's internet websites.

[1] Ministry of Industry, Mines and Energy (MIME); Electricity Authority of Cambodia (EAC); Electricité du Cambodge (EDC); Rural Electrification Enterprises (REE)

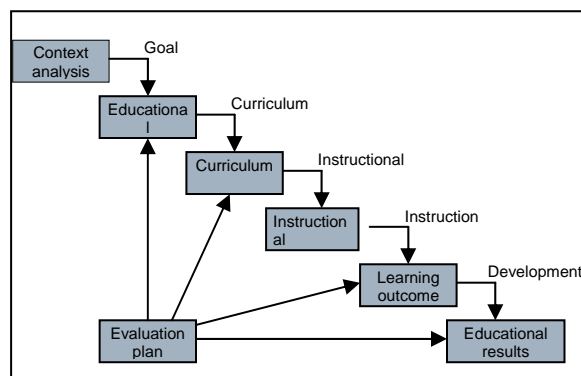On 17 October, final consortium meeting was held in ITC campus to finalise all activities.

Figure 2 : VTCL's curriculum development process

2. Summary of project's achievements

A. Review and context study

- Conducted between Aug–Nov 05
- Output: Comprehensive reports on :
  - Contexts and regulations, plan on rural electrification,
  - References and activities in rural electrification,
  - Background information on REE & PESCO
  - Existing training opportunities in Cambodia and Laos

Figure 3 : Contexts in reality – REE genset

B. Survey and training needs

- Implemented between Nov. –Dec 05
- Survey of randomly chosen 135 REEs & 35 PESCOs with 48 questions in 5 groups:
  - General information
  - Education background
  - Technical & professional background
  - Training needs
  - Specific questions

- Outputs: Survey analysis and reports which provided clear and detailed background info on

REEs & PESCOs, identified training needs & opportunities.

Figure 4 : Survey in reality– questionnaire interview.

C. Curriculum guidelines & review WS
- The curriculum guidelines were developed between December 05-Mars. 06 and the Review WS was organized in Laos 13 March 06
- Outputs: Curriculum outlines & reviews proceedings
  - Select ILO (Intended Learning Outcome) using SMART criteria
  - Modular structure following ILO for broader target group
  - Course outline presented with :
    - Training modes: class room, exercise on paper, practical demo, field work
    - Choice of options for NUOL & ITC

D. Business cases
- Development of business cases was implemented between Jan. – April 06
- Business cases posing a set of important questions, when a training institute intends either to start a new course or not
- Business-oriented considerations: focus lies on training marketing, course implementation, organizational & management conditions and financial planning,
- Outputs: Business plans were established for both institutions ITC & NUoL.

E. Training manuals
- The training manuals were developed between April – August 06
- Three modules, consisting of 10 units have been proposed:
  - Based on survey, studies, feedback
  - Addressed practical problems & concerns
  - Highly involvement of all partners

- Theory + practical exercises
- Translated into Khmer & Laos
- Widely available to all stakeholders (CD-ROM, paper, internet)
- Ten units of the training manual
  - A1.1 – Business Management for ESCO
  - A1.2 – Generation option & Renewable energy sources
  - A1.3 – EE, Elec. Standards & licensing
  - B1.1 – Basic elect. fundamentals
  - B1.2 – Operation of genset
  - B1.3 – Regular Maintenance of genset
  - B2.1 – Making network connection, earthing, meter installation
  - B2.2 – Building low voltage single and three-phase networks
  - B2.3 – Safety & environment
  - B2.4 – Battery charging

F. Training of Trainers (ToT)
- Carried out in September 2006
- Discussion and exchange on:
  - How the training should be?
  - What are the best methods to deliver
  - Equipment & choice of practical exercises
  - Preparation for the pilot training
- Outputs: final manuals in English, Laos & Khmer. 5 ITC trainers & 5 NUOL trainers have been trained.
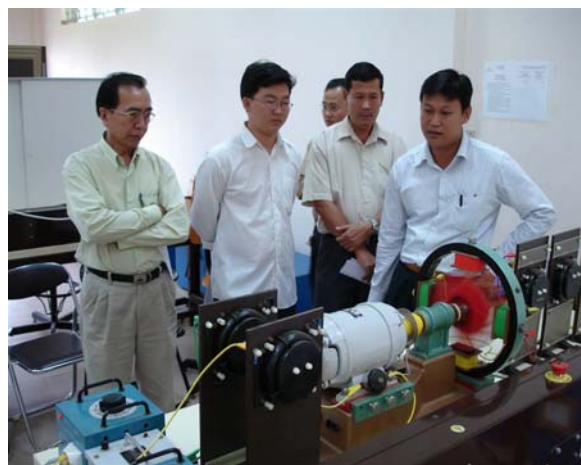
Figure 5 – ToT in reality – at EDC training center.

G. Pilot training
- Two-week pilot trainings were implemented in Laos & Cambodia, Sept-Oct 2006
- Preceded by a advertisement campaign
- 20 trainees for Cambodia & 11 for Laos have been trained.
- Pilot training reports – assessments on:
  - Participants
  - Training program
  - Appropriateness of the topics

- Teaching
- Learning
- Management & Logistic arrangement
- Recommendations

- It served very good indications for further development of the course and its delivery

Figure 6: Pilot training in reality at NUOL

3. Perspectives and issues related to Vocational technical training in Cambodia and in Laos

Questions

A number of basic questions seem pertinent for vocational training systems in general, and for REE & PESCO in particular for Cambodia and Laos:

- How can supply and demand for training be balanced? How can demand-responsive training be created? How can flexibility be built into training systems?

- What role should governmental institutions play in skills development? When is government support for training justified?

- What role can a private training provision play?

- What role can trainings play in improving services? In particular, what approaches are recommended to address quality?

- What can be done when there are not enough wage jobs to go around? What role can trainings play to improve incomes in the informal sector? What can be learned from previous experiences with training in the informal sector?

- How can financial transfer mechanisms be used to make training more effective and efficient?

- What can be done to facilitate sustainable systems of skills formation?

Remaining Issues to reflect upon

- Capacity building needs to improve.

- Work on "Business cases" (plans) should be on a continuous basis.

- Update manuals and add more modules (units) following the learning needs

- More specific adaptation for Laos & Cambodia, and for specific target groups is needed

- Cooperation between national institutions should get more attention

- The sustainability of the training program is not assured without additional external financial support.

The answers on these questions and remaining issues are outside the scope of this newsletter. The reader who is interested in possible answers on these can contact the project's partners for further discussion.

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