



Project Fact Sheet

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Renewable Energy Sustainable Programs for Intelligent Rural Electrification and Poverty Alleviation (RESIREA)

Programme area: COOPENER Cambodia - Laos - Vietnam
Status: Finalized

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Partners:

- Fraunhofer Institute for Solar Energy (ISE), Germany
- Centre Wallon de Recherches Agronomiques (CRA-W), Belgium

Sub-contractors:

- Department of Energy Techniques, Ministry of Industry, Mines and Energy - Cambodia
- Department of Energy, Ministry of Energy and Mines – Lao PDR
- Centre of Renewable Energies and Rural Development - Vietnam

Website: www.energies-renouvelables.org/resirea



Objective: Sustainable wide-scale renewable energy-based programmes for rural electrification and support for institutions in terms of energy planning

Benefits:

- Technically and economically sustainable electrification programmes
- Promotion of ecological and decentralized energy systems
- Contribution to poverty alleviation

Keywords: Sustainable, renewable, planning

Duration: 01/2007-01/2010

Budget: € 603,203 (EU contribution: 50%)

Contract number: EIE/06/272/SI2.449064



Short description

The RESIREA program aims to promote wide-scale access to electricity by the use of renewable energies in rural areas in Lower Mekong Countries to contribute to poverty alleviation. Three different provinces are targeted: **Kampong Thom** in Cambodia, **Oudomxay** in Laos and **Dak Nong** in Vietnam.

RESIREA proposes to:

- Implement an innovative methodology based on the cross-analysis of technical and economical parameters, which will identify the most suitable zones and give a clear visibility to potential investors.
- Define ready to implement electrification programmes, financially sustainable and interesting for local operators and submit them to private operators and financial agencies.
- Train decision makers and national / provincial actors in renewable technologies and Decentralized Rural Electrification (DRE) planning.
- Communicate the results and feed back of the studies.

Achieved results

The achieved results are the following:

- Identification of **hydropower potential sites** and training of local actors to the flow rate measurement,
- Elaboration of **provincial databases**, describing the socio-economic, geographic, demographic, environmental context,
- Inventory and **analysis of existing rural electrification projects**,
- Identification in each province of **the most suitable and promising villages** for developing decentralized rural electrification project with renewable energies,
- Presentation of the results to local actors (public and private) for **discussion and validation**.
- **30 villages selected in Oudomxay, 27 villages in Kampong Thom and 26 in Vietnam**, for a total population of **150 000 direct and indirect beneficiaries**,
- Detailed studies of the selected villages, with analysis of the local context (geographic, sociodemographic and economic data), and of the energy demand and ability to pay electricity,
- Presentation of the results of the **detailed studies** during three workshops early 2009,
- Precise assessment of **the biomass energy potentials** in the targeted villages,
- Analysis of all collected data to **design three sustainable large-scale rural electrification programmes** in the provinces, based on renewable energies, with **technical, operational and financing** schemes described;
- **Submission** of the Programmes to local stakeholders, investors and development players during **3 final seminars held in November 2009**;
- Training sessions and information campaigns for a better awareness of local stakeholders in renewable energies;
- Approximately 300 players in Asia and in Europe informed about RESIREA studies and outcome

The three large-scale programmes, called “Green electricity” will benefit to **150 000 people, from domestic, social or economic sectors**. Their implementation will avoid **15 000 tonnes of CO₂, thanks to the harnessing of solar, hydro and biomass local potentials**.

A call for fund is launched to convince international and Asian actors to commit in the financing of the programmes. The total investment cost to electrify these 83 villages is **7 million Euros**.

Lessons learnt

❖ **Strong local policies to promote renewable energies for off-grid electrifications**

Despite a strong will to reach ambitious objectives set by local governments for rural electrification, few off-grid renewable energy projects have been carried out so far, due to lack of planning and financing resources.

Especially, planning is done at the level of national institutions in the Ministries, but is lacking at the provincial scale. RESIREA is thus interesting, as it **provides provincial and district authorities with necessary tools for a sensible planning, to know where to start first**. That's why RESIREA training sessions have especially targeted provincial departments in charge of energy.

❖ **A regional approach is interesting but national specificities have to be considered**

One of the purposes of RESIREA programme was to foster cooperation between the three target countries. This was successfully achieved, with several international meetings and training sessions.

However, the energy contexts of the three countries are quite different, in terms of policy, legal framework, electrification rate or private sector's involvement.

As a result, the **three programmes defined by RESIREA in the provinces are dissimilar**: technologies adopted, tariffs schedules, operational and financing schemes are specific and well-suited to the provincial specificities.

❖ **Funding of such large scale projects requires the involvement of diverse players**

The implementation of large-scale renewable energy programmes implies high investments costs. To overcome this initial barrier, an innovative financing package is required, based on both public and private funds. A broad panel of financing sources, from carbon trade to international private investors, or venture philanthropy is required to find an appropriate package.