

Integrated Energy Solutions in Agro-Farming – Pilot-Phase in Shrimp Farming

Project Objective

The project aims to promote integrated energy solutions, higher energy efficiency motors (HEMs) and solar photo voltaic (PV) systems among shrimp farms and agro sectors in Thailand and the Mekong region.

The key issue here is the acceptance of the models by the target groups (i.e. the farmers and the equipment suppliers). This acceptance will be gauged against the actual initiation of investment projects adopting the project integrated approach and by the adoption of the financing models for HEMs and solar PV systems by equipment suppliers, as developed and promoted by the project. By the end of the project, 20 farms are expected to have undertaken the installation of HEMs and solar PV systems based upon the approach promoted by the project. In addition, at least one equipment supplier will adopt the energy service company (ESCO) model developed through the project. By replicating these models throughout the region, the project aims to achieve, within 3 years after funding by EEP Mekong programme, the savings of 1 million tonnes of diesel and the avoidance of 2.7 million tonnes of CO₂ per year. This reduction in diesel consumption will significantly improve the economic situation of farmers.

Description

The project will promote the application of integrated energy solutions in shrimp farms. To that end, the project will:

1. Implement a pilot project that combines HEMs for aerators and solar PV systems;
2. Develop investment and financial models including ESCO and, if relevant, CDM financing. The transfer of these models to the private sector is an integral part of the project design;
3. Demonstrate the technical and financial feasibility of investment in the integrated energy solutions through guidebooks and visits to pilot projects; and

Project Highlights

Project ID	: 2-T-050
Country	: Thailand
Lead Partner	: International Copper Association Southeast Asia (ICA-SEA)
Partners	: Grontmij AB, Federation of Shrimp Cooperatives of Thailand (FOSCOT)
Total Project Cost	: € 338,760
EEP Financing	: € 200,000 (59.04%)
Technical Focus	: Hybrid
Activity	: Pilot Project
Duration	: 18 months

4. Disseminate the financial models and approach with seminars in shrimp, fish and rice farming sectors in Thailand, Laos, Cambodia and Vietnam.

Through these activities, the project will induce a sustainable trend of investments in HEMs (for aerators, pumping, etc.) and solar PV systems in shrimp, fish and rice farming sectors in the Mekong region. This will further lead to a reduction in diesel consumption and GHG emissions. For farmers, it will result in important cost savings, thereby improving their financial strength.

The rice, shrimp and fish farming sectors are very important to the economies of the Mekong region, providing employment to numerous farmers. The project will generate important multiplier effects: sustainable trend in investment in Renewable Energy (RE) and Energy Efficiency (EE) systems, improved economic situation of farmers, sustain job employment in these sectors, improve quality of shrimps thus generating additional business opportunities for farmers, etc.

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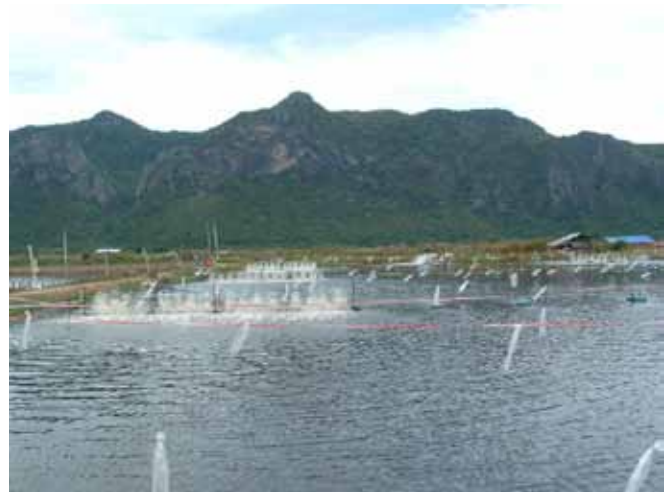
Relevance to Country's Energy and Environment Policies

In December 2006, GTZ, with the support of the Thai Department of Fisheries, the Thai Department of Alternative Energy Development and Efficiency (DEDE) and various shrimp farmers groups including the Federation of Shrimp Farmer Cooperative of Thailand (FOSCOT) has, among others, implemented pilot projects in 10 shrimp farms by replacing old inefficient electric motors with higher efficiency electric motors (HEMs). The results show 15-30% improvement in EE, which helps reduce consumption of diesel (farmers rely on diesel engines for their aerator systems). In January 2010, ICA-SEA (lead applicant) became a partner in the E3Agro project, and conducted consultation with the members of FOSCOT, which identified further opportunities for improvements in fuel savings through the installation of solar PV systems. Farmers showed strong interest in an integrated energy solution that would combine HEMs and solar PV systems to reduce dependency on diesel, save cost and reduce emissions of GHG.

Innovation and Knowledge Transfer

The project proposes an integrated approach and thus constitutes a pioneer initiative that will address simultaneously the supply side (improving the share of RE) and the demand side (improving energy efficiency). Targeted capacity building for equipment suppliers and shrimp farmers and dissemination activities, promotion materials and events organized in Mekong countries will ensure the expansion of the impact beyond the immediate target groups.

The project will induce a real change of approach by facilitating the development of less extensive but higher quality production by the farms. The investment and financing models developed by the European partner will be transferred through a training workshop to the Asian partners, thus building the capacity of these institutions.



Shrimp Farm in Thailand

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