

# TBEC Biogas Project in Lao PDR

## Project Objective

The project aims to capture and destroy methane to significantly reduce greenhouse gas emissions. It also aims at efficiently cleaning wastewater to reduce the smell as well as replace the fossil fuel usage.

Once completed, the project will convert wastewater of a starch factory into clean biogas in an anaerobic reactor. The biogas will be sold to the starch factory at a discount to coal prices. The starch factory will burn biogas as substitute fuel to coal to dry the starch.

The project will help stimulate Lao PDR's economy, provide another domestic fuel source and ultimately contribute to a better living environment for local factory staff, farmers and residents.

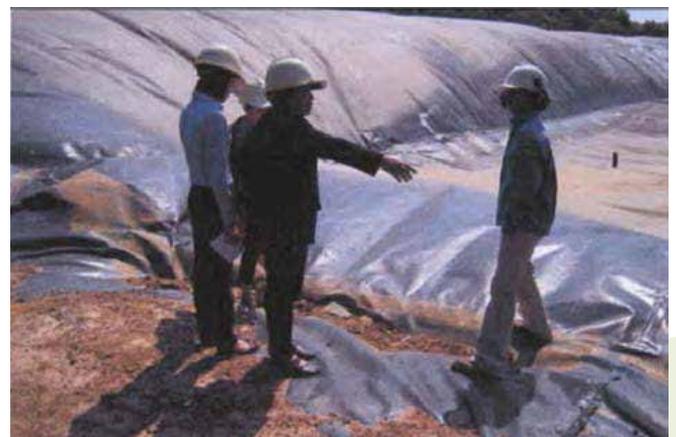
## Description

The project will anaerobically treat wastewater, capture biogas, sell it back to the starch factory as a replacement of fuel for coal (fuel substitution), at lower prices than coal price. The starch factory benefits from a less expensive fuel that is clean and always available. The project will increase the competitiveness of the starch factory and assist Lao PDR in developing a competitive starch industry. The local and international community will benefit as greenhouse gas emissions are significantly reduced (by 30,000-60,000 tonnes per year after the project completion). Further, as the wastewater will be cleaned in a controlled reactor, the rotten egg smell will be eliminated. In addition, the project directly creates employment for nearby residents.

The biogas plant will be designed by a leading designer of biogas plants using covering in ground anaerobic reactor technology and implemented by TBEC in Thailand that received the Crown Standard award for quality of construction of a small biogas plant. The technology is new to Lao PDR and thus the project facilitates technology transfer.

## Project Highlights

<b>Project ID</b>	: 2-L-011
<b>Country</b>	: Lao PDR
<b>Lead Partner</b>	: Thai Biogas Energy Company (TBEC)
<b>Partners</b>	: Liqueur, National University of Laos (NUOL), TBEC (Lao) Co., Ltd.
<b>Total Project Cost</b>	: € 2,300,000
<b>EEP Financing</b>	: € 200,000 (9 %)
<b>Technical Focus</b>	: Biogas
<b>Activity</b>	: Demonstration Project
<b>Duration</b>	: 14 months



Foreign experts discussing Covered Lagoon Bio-Reactor (CLBR) technology in TBEC Kalasin plant



TBEC team studies on site with biogas experts

## Relevance to Country's Energy and Environment Policies

The Lao government encourages renewable energy projects. This project is well-aligned with Lao PDR National Growth and Poverty Eradication Strategy as it:

1. Promotes economic development
2. Increases starch industry competitiveness
3. Aligns well with the Millennium Development Goals (MDGs), especially the goal to ensure environmental sustainability
4. Develops a centralized source of energy
5. Provides a domestic fuel source
6. Supports Lao PDR renewable energy aspirants and is in line with the Lao priorities in reducing GHG emissions
7. Increases availability of biogas and replaces coal in its vicinity
8. Provides reliable energy supply and thus alleviates a bottleneck for continuous production and growth
9. Creates a sustainable environment
10. Facilitates technical and scientific know-how transfer from donors to the EEP countries
11. Improves socio-economic and living conditions

## Innovation and Knowledge Transfer

The project will be used as a model to educate locals, including government authorities on CDM mechanism, through organized site visits, workshops and seminars.

Staff training will increase the capacity of local employees to handle different kind of situations. TBEC Laos staff in the plant will be trained locally and at TBEC's sites in Thailand. TBEC's experts will conduct the training together with NUOL and laboratory persons.

Students will also be trained to study, take and test water samples in the university and at on-site laboratories.

Environmental and technical workshops will help to make the project successful. International and local experts will discuss renewable energy related issues during workshops. In addition, local experts will have an opportunity to visit the TBEC Thai biogas plant.

### For more information:

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