

Biodigester Project



Life-Saving Tech

Kitchen air pollution is one of the biggest killers in Cambodia. WHO estimates that up to 14,000 deaths per year come from firewood-based pollution, which means that women are disproportionately affected.

Most people living in rural Cambodia have enough animals to generate biogas for cooking as a replacement for firewood. Social enterprise ATEC has developed and introduced a biodigester that is durable, affordable, and efficient. EEP Mekong provided funding for the biodigesters' deployment in rural Cambodia and to allow subsequent scaling up on a commercial basis.

EEP Mekong funded
40%



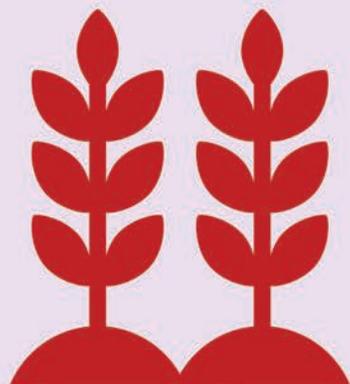
917
biodigesters
installed



4,900
people
benefited

Every year, each biodigester:

produces 383 m³
of biogas
and
19 tonnes
of organic fertilizer,



avoids **3 tonnes**
of CO₂



and saves
\$260

ATEC Biodigester Project

www.atecbio.com

Saving Lives with Biogas

Cooking with firewood not only causes major kitchen air pollution, but is also one of the root causes of deforestation. Cambodia has one of the highest deforestation rates in the world and wood is becoming increasingly scarce and expensive.

However, most households in the rural areas own enough animals to generate biogas for cooking.

Social enterprise ATEC sells a biodigester that is durable, reliable, and less expensive than others in the market.

In one year, an ATEC biodigester:

- generates 383,000 litres of renewable biogas for cooking;
- reduces kitchen air pollution by 80%;
- produces 19 tonnes of organic fertilizer;
- conserves 2.5 tonnes of forest wood;
- reduces greenhouse gas emissions by 3 tonnes;
- and saves each rural household an average of \$260.

Project Details

The project objective was the deployment of the biodigesters to 13 provinces in Cambodia. EEP Mekong funded 40% of the project value (€630,000). The project ran from May 2017 to February 2019 and established a sustainable marketing infrastructure.



ATEC plans to sell one million biodigesters in five countries by 2030

Business Model

The project focuses on introducing and marketing the high-quality prefabricated ATEC biodigester, which is manufactured locally.

ATEC's biodigester is made of UV-treated LLDPE with a unique design for higher heat retention. This design makes the ATEC biodigester superior to other biodigesters in the market. The biodigester can be installed either above or below ground and installation can be done in half a work day. Operating and maintaining the biodigester is simple and it has a 25-year expected lifespan. The company has positioned their biodigester as the best-quality, most affordable, and quickest-installation solution in the market.

ATEC's Marketing Approach

1. Product package sold wholesale ex-factory to Cambodian distributors, who make a sustainable profit of around \$100 per unit.
2. ATEC employs provincial coordinators (PCs) trained by sales consultants. PCs sell directly to customers and also support the distributor in their sales activities, including the financing of purchases.
3. Technicians trained and certified by ATEC install and commission the units.
4. Sales and installation data are compiled by ATEC's marketing team for after-sales service to biodigester users and distributors.



Financing Biodigester Sales

The ATEC biodigester retails at between \$500 and \$650 (VAT incl.) and can be paid off at \$30 per month over 24 months. Savings on firewood and fertilizer come to \$23 per month in total, so the biodigester's actual cost is calculated as only \$7 per month.

Three payment options were introduced:

1. cash payment
2. loans from microfinance institutions (MFIs)
3. in-house finance offered by retailers

Major changes in the MFI sector in 2017 (minimum loan amount as well as collateral requirements) made it challenging for ATEC to sell biodigesters to clients who had wanted to use the second payment option.

Despite this, the company sold a total of 917 biodigesters over the project duration.

Scale-Up Potential

- ATEC will reach their break-even point on selling 1,900 units, after which they can expand further without external financing.
- To promote sales, ATEC is negotiating with new financing institutions to offer clients new financing options.
- ATEC is replicating the proven business model in Myanmar and Bangladesh.
- Larger biodigesters (10 m³) have been introduced for use by pig farmers in Myanmar.
- Development of a biodigester for household waste (targeted at city households) is in progress.
- The business target is to reach one million households across South and South East Asia by 2030.



ATEC biodigesters are cheaper and easier to install compared to competitors.

Installation only takes half a work day.

