

Wastewater treatment with biogas production, Thailand

Captured methane from starch plant waste waters is being used as fuel in existing heat generating devices and is furthermore replacing the use of heavy fuel oil.

Location



The wastewater cycle was installed in a starch plant 200 km North-East of Bangkok, in a rural region with mostly agricultural background. The starch is produced from cassava roots, grown by farmers from a radius of 30 km around the plant.

Project

The project activity involves the installation of an anaerobic wastewater treatment facility, based on *Upflow Anaerobic Sludge Blanket* technology, at a starch manufacturing plant where large amounts of waste water are being produced every day.

Before the installation of the project the wastewater in the plant was treated through cascading lagoons with a retention time of more than a year. The mix of the lagoon size, atmospheric and water temperature, resulted in an anaerobic environment in the ponds. These conditions led to methane generation from the organic content of the wastewater which was steadily released into the atmosphere.



The installation of an anaerobic wastewater treatment facility enabled the capture of methane, reducing the emission of this strong GHG (21 times stronger than CO₂). The project utilizes the captured methane as fuel in existing heat generating devices in the plant replacing heavy fuel oil, and the surplus methane, if any, is flared in an open flare.



Benefits

- The construction, operation and maintenance of the biogas plant generated local employment. In fact eight permanent positions were created covering both qualified and support staff positions.
- The project captures the methane which otherwise would be released into the atmosphere thereby improving local air quality.
- The treated water is recycled for use in the plant, and is not released into any surface water body, thus benefiting the local environment.
- The project activity led to significantly better air and water quality in the region, allowing for fish farming in the treated water.
- Long term transfer of knowledge and technology to the region.
- Biogas power contributes to resource conservation and produces zero solid-waste end products to be disposed of.
- The plant owner supports neighbouring schools with IT infrastructure and scholarships to strengthen sustainable development of the region.
- The local kindergarden received fundings from the project owner.



Details

South Pole Project 300044

DOE: SGS UK

Standard: VCS 2007

Average annual emission reduction: 95'000tCO₂e



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