



Cows to Kilowatts

Ibadan, Nigeria



Partners

Global Network for Environment and Economic Development Research, Nigeria (NGO)

Biogas Technology Research Centre, KMUTT, Thonburi, Thailand (Research Institute)

Centre for Youth, Family and the Law, Nigeria (Community-based Organization)

Sustainable Ibadan Project, Nigeria (UN-HABITAT Programme)

A local NGO and a community-based organization join with technology innovators from Thailand and the Sustainable Ibadan Project to install a biogas plant running on abattoir effluents to create a source of domestic energy, abate pollution and mitigate greenhouse gas emissions.

Greenhouse gas emission and pollution are two serious environmental side-effects of abattoirs. Abattoir effluent critically impacts human health, agriculture, potable water and the ecology of aquatic species and has become a significant problem for many urban communities in Nigeria.

There are currently no waste treatment plants for abattoirs in Nigeria. Legislation for the protection of water sources is inadequate and there is no clearly established, coordinated policy framework to tackle water pollution and greenhouse gas emission.

The partnership aims to abate pollution and mitigate greenhouse gas emission by constructing a biogas plant. The plant treats wastewater and produces biogas (mainly methane and carbon dioxide) using the anaerobic fixed film (AFF) biogas technology. The biogas will be upgraded, compressed and used as a substitute for natural gas in household cooking. It could also be used to generate electricity. The sludge from the reactor will be used as organic fertilizer.

It is estimated that the biogas produced would cost households half the current market price of natural gas. The pilot plant in Ibadan will be the first in the world to simultaneously treat abattoir effluent and provide domestic energy and organic fertilizer.

Each partner in this cross-continental collaboration has a clearly defined role. The NGO initiated and coordinates the project. The plant will be designed by the Thai research institute and the construction of the plant will be carried out using local manpower and materials. The community-based organization is working to engage local stakeholder groups. Once the construction of the plant is complete, it will be managed by the Sustainable Ibadan Project, a UN-HABITAT initiative.

The biogas plant is expected to return a profit on the initial investment within three years and will have a productive life of fifteen years. It has tremendous potential to be replicated in other urban areas of Nigeria, across Africa, and beyond.



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