

The BioFactory

Sustainable sanitation systems for refugee camps in sub-Saharan

Challenge

There are ~3 billion people who lack access to energy depriving them of a clean fuel source for cooking. One billion people do not have access to electricity with 50% found in Sub-Saharan Africa. Additionally 2.3 million people around the world lack access to basic sanitation, with diarrhoea kills more than 1.4 million people per year. The energy and sanitation needs are recognised by the UN and enshrined in Sustainable Development Goals 6 and 7; clean water and sanitation and affordable clean energy. The BioFactory Ltd. are start-up company dedicated to providing novel solutions to the production of clean energy whilst addressing sanitation issues.

Solution

The Biofactory is developing novel portable bio digester units that turn human waste into methane gas. This gas can then be used as a clean source of fuel for cooking. The plan is build units to the dimensions of a shipping container. So that the bio digesters can be shipped and used in such places as refugee camps and villages in Sub-Saharan Africa. Additionally the Biofactory is aiming to use the waste produced from the process as a fertiliser to grow crops for either use by the community or for export. As part of any trial The Biofactory will have to establish that any waste product that is used as a fertilizer for crops is free from bacteria that could cause harm and infestations such as tape worms. In Africa these units will be used far away from laboratories and hence any test has to be easy and simple to use.

HTH Contribution

The HTH supported The BioFactory by helping them to develop a protocol for the field testing of the waste product they wished to use as a fertilizer. The HTH firstly identified what pathogens could be present, and then how best to test for them. The HTH also helped in the redesign of the control system ensuring that it was thoroughly shielded to avoid sparking, and igniting the methane that the units produced.

“The HTH have been fantastic to work with, we really recommend them to companies looking for adaptive technical expertise. After our initial meeting to define a scope for the project, I had the opportunity to be shown around the Labs, which are full of dynamic projects and research. The project ran smoothly, with the work being carried out quickly with little input required from me. Within several weeks, the work was complete and I returned for a final meeting and summary of the research conducted. This was great as I was able to discuss the results in a less formal manner with the researchers. The reports that the HTH staff produced are very well written and go into significant detail. I’m very happy with the outcome of this project.”

Eoin Sharkey

Founder of The BioFactory

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