



Low Emissions Development Program

Biogas at Schools in South Africa: A Case Study on Khangezile Primary



Employees of the school tend to the community garden which feeds the pupils and food waste feeds the biodigester.

Khangezile Primary School was fortunate enough to be chosen as one of four schools by Earthlife Africa, an environmental justice organization, to have renewable energy technology installed in the school as part of the Sustainable Energy and Livelihoods project. The school in KwaThema, east of Johannesburg is now able to feed about 400 children twice a day which is also subsidised by the Gauteng Department of Education. The funds for the project were sponsored by the European Union and Oxfam.

Now equipped with a biogas digester as well as solar panels, the school is now able to go almost entirely off the grid. The social impacts of having a bio digester at a school can also be seen through the improved quality of life for the students and their families due to the reduction of waste, rats and associated health problems.

This success has now seen an increase in demand in other schools around the country. The USAID South African Low Emissions Development (SA-LED) Program conducted a co-benefits study on the use of biogas in schools and was able to learn from the benefits with Khangezile Primary School as the pilot project of a school using biogas.

Biogas from food and other organic waste is not a new form of producing natural gas for energy. However, biogas technology has developed to a point where it is not only farmers and large waste treatment installations can benefit from it. Small scale “drop-in” plastic biogas digesters are now made in South Africa and are currently being used in schools and communities. In the Eastern Cape alone at least 65 biogas digesters have been installed at schools and linked to the school feeding schemes by providing gas for cooking as well as using the food scraps from the kitchen. Unfortunately, most of them are not working as planned with the key problem being that the local stakeholders do not know how to keep them functioning rather than the technology or construction failing. SA-LED is now investigating key requirements for implementing successful and sustainable biogas systems. These findings will be used to assist the various Eastern Cape Provincial departments involved to further roll out biogas projects in schools. A further objective is to develop a framework for SA-LED to support emerging programs for biogas in schools in the Eastern Cape and other provinces in South Africa.

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