

## **Official opening of The Greening of the Earth Centre**

The partnership between the University of South Africa (Unisa), mining company Exxaro Resources and the South African National Energy Development Institute (SANEDI) officially launched its first institutional anaerobic biogas digester at Earth Centre in Johannesburg this week.

The 10 cubic metre bio-digester uses a feedstock of horse manure diluted with a sustainable volume of water, including grey water, to produce biogas fuel for heating applications. In households, schools, early childhood development centres and community facilities, the fuel can be used for as a substitute for electricity or LPG. It can be used for cooking, water heating, space heating and lighting.

The installation and utilisation of the biogas from the biogas digester will not only improve people's standard of living but will also help the environment by minimising organic waste that is left to decompose uncontrolled.

After the processing of horse manure, the resultant digestate is an organic fertiliser which can be used to support organic gardening and other farming processes.

Due to the nature of the project, there are opportunities to create primary jobs in the implementation, operation and maintenance of the biogas systems. The project is also able to support secondary job creation in supporting food security initiatives and other farming activities.

The biogas projects can also help to mitigate climate change-related challenges in capturing methane and combusting it into heat and carbon dioxide. It minimises bio-wastes sterilises them into digestate that can be valorised.

This initiative adds to the skill development of the operators who ultimately can diversify their skills into renewable energy services and stimulate an interest in renewable energy and energy diversity.

"This 10 cubic metre digester, has been inoculated for a period of three months to enable the bacteria to produce biogas. It is the first time in the works of SANEDI and UNISA that this kind of substrate is used as a feedstock for biogas production. This will open up a possibility for many stable owners to address the problem of "horse manure nuisance" that beset them." explains David Mahuma, General Manager, Working for Energy at SANEDI.

"With the successful installation of the first institutional digester in the Gauteng Province, 19 more are in the pipeline to be installed at a variety of locations in Gauteng, North West, Free State, Limpopo and Mpumalanga provinces, with a particular focus on institutions such as old age homes, Early Childhood Development Centres, schools and clinics. The impact within institutions is greater than within households since more people stand to benefit from the system that in a family setting. The partners will look at smaller systems that are cost effective which

can be used by households. This will be in line with our mandate to be an of our abundant energy resources.

We look forward to more strategic collaborations, which will see more communities being introduced to sustainable and clean energy solutions.

“SANEDI has already undertaken similar work in various institutions such as early childhood development centres, institutes of higher learning and community facilities across the country, using different feedstocks such as food waste, human waste, pig manure or cow dung and different designs of dbiogas digesters.

This technology is very simple. It’s basically a bladder, with an inlet and outlet, and a gas outlet. What you do is feed it on one side and gravity does the work of moving the stuff, and gas is produced on the other side. The only challenge is balancing the acidity in certain feedstocks such as food waste, but the beneficiaries are also trained to do tests on that because the mixture has to be as neutral as possible.

“Biogas is a proven renewable energy that changes the lives of poor communities living in rural areas. The installation of anaerobic digesters will be of great importance not only in promoting the standard of living for people but help the environment by minimising the amount of organic waste. Biogas usage is not limited to low income communities, but also finds application in commercial and industrial applications,” concludes Mahuma.

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### **About SANEDI**

The South African government established the South African National Energy Development Institute (SANEDI) to direct, monitor and conduct applied energy R&D, demonstration and deployment, as well as to undertake specific measures to promote the uptake of green energy and energy efficiency in South Africa. Its mission is to use applied and energy research and resource efficiency to develop innovative, integrated solutions that will catalyse growth and prosperity to meet its vision of sustainable living for growth and prosperity in Africa. For more information, go to [www.sacccs.org.za](http://www.sacccs.org.za).