

## **International Training Seminar and Summer School 26-30 November 2018**

The School of Engineering at the University of KwaZulu-Natal (UKZN), in collaboration with the Southern African Regional Branch of the International Waste Working Group (IWWG) and the South African National Energy Development Institute (SANEDI) presented a three day International Training Seminar on Managing Waste as a Resource. Along with a five day Summer School as an introduction to the new coursework's Master of Science in Engineering in Waste and Resources Management (WaRM).

The Master of Science in Engineering in WaRM Course will become available from 2019. The course was designed to provide engineering and science graduates with theoretical, research and design knowledge. This knowledge can be applied in providing engineering solutions to various environmental problems. Such solutions are compliant with the environmental regulations and essentially focus on waste and resources management.

Mr. Neville Smith from SANEDI delivered a presentation on SANEDI, its current programmes and subprogrammes directed at waste to energy initiatives. These projects include the SANEDI-GIZ waste web based tool that can be accessed at [awtguide.environment.gov.za](http://awtguide.environment.gov.za).

The web based tool provides an overview of developing an alternative waste treatment. It also allows you to choose appropriate technologies to deploy as alternative to energy solutions. It provides insights to municipal processes, especially insofar as procurement and financing is concerned. It sketches the necessary legislative requirements which include licensing and permitting of appropriate technologies.

SANEDI and the National Energy Corporation of South Africa (NECSA) similarly collaborated in developing a pyrolysis waste to energy Proof of Concept (POC). This unit treats between 0, 2 and 0, 5 tonne of organic waste per day. It has an electrical generating capacity of between 10 and 25 kW. In addition, SANEDI-UKZN has a collaboration in developing a waste characterisation methodology. The WROSE Model developed by the UKZN will be refined and employed to analyse waste characterisation data. The suitability of municipal waste as feedstock in thermal energy conversion technologies is being evaluated.

Figures 1 and 2 below are examples of landfill management and deployment of a landfill gas to energy project in Johannesburg. Figure 3 is an example of the New Horizons - waste to energy treatment plant in Cape Town, Athlone. Figure 4 is an example of waste characterisation studies conducted in Cape Town.



**Fig 1: Landfill Management in Johannesburg**



**Fig 2: Landfill Gas to Energy at Robinson Deep landfill Johannesburg**



**Fig 3: New Horizons Waste to Energy Plant in Cape Town, Athlone**



**Fig 4: Waste Characterisation Study in Cape Town, Winelands District**