UNIVERSITY OF JOHANNESBURG

**Process, Energy and Environmental Technology Station (UJ PEETS)**

# ENERGY

Renewable Energy Solutions
Energy Efficiency
Waste to Energy Conversion
Energy Micro-Grids & Mini-Grids
Energy Storage

science, technology & innovation
Department: Science, Technology and Innovation
REPUBLIC OF SOUTH AFRICA

technology innovation AGENCY

peets
PROCESS ENERGY & ENVIRONMENTAL TECHNOLOGY STATION

# Short Learning Programme (SLP)
# Domestic Biogas Plants

Domestic digesters have great potential in rural and peri-urban areas due to its potential to meet heating, cooking, electricity and fertiliser needs of farmers and local communities, thereby developing and growing the circular green economy and reducing harmful impact on the environment through a cost-effective method.

The SLP aims to provide candidates with the knowledge and skills needed to plan, build and operate a domestic anaerobic digester. It aims to develop skills required for the management, maintenance and resuscitation of domestic anaerobic digesters.

## THE PROGRAMME

- 1 week of contact lectures
- 2 days of on-site work
- Installation and pipe connections, appliance connection, system testing, digester loading
- Preparation for the assessments
- 4-hour site visit/work-based learning
- 4-hour lab practical/tutorial
- Independent learning and engaging with mandatory reading and supplementary materials provided

**TOTAL NO OF HOURS**: 96 / **COST**: R12 340.00

## THE FOLLOWING TOPICS WILL BE COVERED

- Overview of fundamentals of anaerobic digestion
- Feasibility evaluation for site suitability for domestic digester.
- Energy audit and resources evaluation
- Domestic digester types
- Guidelines for planning, selecting, designing, and constructing domestic digester
- Design calculation for digester sizing
- Material estimation
- Costing domestic digester system
- Construction consideration for domestic digester
- Operational problems of domestic digesters
- Maintenance of domestic digester
- Methods of improving digester productivity
- Purification, compression and storage of biogas
- Utilisation system of biogas
- Digestate management and utilisation
- Safe working practice (General OHS)

## THE BENEFITS OF THE PROGRAMME

Upon successful completion of this course candidates should be able to convert household waste and agricultural waste such as manure into biogas and organic fertiliser and keep the system running optimally. With the skill set gained through this SLP, the participants could become entrepreneurs by offering this solution to other members of their community, exporting this knowledge to neighbouring countries and advancing their knowledge to become technicians in the medium to large-scale plants.

## CANDIDATE REQUIREMENTS

The SLP has been designed to provide the fundamental knowledge base to individuals, artisans and entrepreneurs in the SMEs with an interest in alternative energy sources to support local economy and reduce harmful waste on the environment. Candidates successfully completing the programme receive a Certificate of Completion.

Apply **HERE**. For further enquiries send an email to peetstraining@uj.ac.za