South Africa

DBFZ Research and Project Country Profile
Activities & Partners

DBFZ Activities

DBFZ has a long lasting cooperation with South African partners. The cooperation was intensified in 2016 when DBFZ realized several biogas projects, in particular the support for the setup of own research facilities and biogas laboratories at different universities. In addition, DBFZ assisted to develop norms and standards for the organic waste treatment and to implement a standardized protocol for biogas substrates testing. In 2019 started a PhD project, together with Stellenbosch University, on the energetic and material use of Ghanaian and South African agricultural residues.

DBFZ R&D and Project Focus

DBFZ focuses in South Africa on knowledge transfer, in particular on biogas technologies, consultancy on framework conditions for bioenergy, and the energetic and integrated material use of biomass residues.

- Assessment of (unused) agricultural residues on a national, provincial and local level;
- Installation of own biogas research capacities and associated knowledge transfer;
- Technical consultancy for biogas production in rural areas;
- Technical consultancy for the distribution of pyrolysis cook stoves in rural areas;
- Sustainable integration of bioenergy in already existing infrastructures.

DBFZ Future Activities

DBFZ will strengthen its scientific cooperation with Stellenbosch University as well as other research partners. Another pillar for future activities in South Africa is the realization of research and consultancy projects. In particular, DBFZ aims to do:

- Potential analysis on biogenic residues and organic household waste
- Mass flow analysis
- Phytoremediation
- Scientific support, in particular for biogas
- Feasibility studies and technical support, in particular for organic waste treatment
- Knowledge transfer and vocational training
- Research and academic exchange

DBFZ Partners

DBFZ has long lasting partnerships with South African partners in science and society.

Cooperation Agreements	Stellenbosch University
Project Partners	Stellenbosch University North West University

Picture: www.nationalflaggen.de

	Venda University University of Cape Town South African Department of Energy (DoE) ESKOM South African National Energy Development Institute (SANEDI) South African Local Government Association (SALGA)

DBFZ Reference Projects (selected)

6/2016-3/2017	**Biogas Laboratory Support within the South African-German Energy Programme (SAGEN)** **The project focused on the knowledge transfer on different biogas topics. There were five workshops at universities across the country, in particular on biogas analytics.**
06/2017-3/2018	**Support to the development of norms and standards for the organic waste treatment and development of a standardized protocol for biogas substrate testing within the South African-German Energy Programme (SAGEN II)** The project supported South African partners like South African Department of Energy (DoE), ESKOM, South African National Energy Development Institute (SANEDI) and South African Local Government Association (SALGA) to develop norms and standards for the treatment of organic waste.
06/2019-12/2022	**Thermo-chemical conversion of silicon rich biomass residues for the production of heat and power, and the combined generation of mesoporous biogenic silica for material application (BiOx)** The project proposal will investigate the efficient use of silicon rich agricultural residues in South Africa for bioenergy and material applications. It focusses on the chemical pretreatment of biomass residues from food production and its combustion and gasification characteristics for combined heat and power production. Furthermore, material use of the biogenic silica is considered. The comprehensive, innovative approach addresses aspects of climate change (i.e. climate neutral energy provision), efficiency and sustainability of agricultural production (i.e. use of residues, circular economy), soil degradation (i.e. biogenic fertilizer) and new transformation processes of the agricultural production (i.e. new value chains).

About DBFZ

DBFZ is the leading German research institute in the field of energetic and related material use of biomass. DBFZ monitors and evaluates the most promising applications for bioenergy in theory and practice, realizing research and collaborative research projects at both national and international level, with partners and stakeholders from industry, administration, politics and academia. Currently about 180 scientists in the departments of Bioenergy Systems, Biochemical Conversion, Thermo-chemical Conversion and Biorefineries carry out application-oriented R&D and provide scientifically-based results to support informed political decision making.

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