



# 3<sup>rd</sup> Agro-industrial Biogas Training Seminar and Study Tour

11th-13th of December 2017

at the

**University of Cape Town, Chemical Engineering Department  
Garnet Room, New Engineering Building, Upper Campus**

The International Biogas and Bioenergy Center of Competence **IBBK** is delighted to invite you to the third **Biogas Training Seminar at the University of Cape Town**.

Together with the support of our partners we invite farmers, engineers, scientists, project developers, consultants, investors and the financing sector to participate in the biogas training seminar to be held on **11. - 13. December 2017**.

The seminar will address the topics of project procedures and approvals, quality features and case studies in the field of electricity generation from biomass waste. The course will be facilitated by speakers from South Africa and from IBBK, an internationally renowned German-based training institute.

### Who is this course for?

- Biogas plant operators and staff
- Farmers planning to operate an AD facility
- Academic institutions
- Central and local government officials engaged with AD
- Banks and investment houses, private investors

### Teaching Method

Interactive classroom teaching with all experts available for comments, questions and answers. With participants active involvement, practical exercises and site visits.

Endorsed by:



### Conditions of participation:

Registration is required in writing per fax or e-mail. After receiving your complete registration. The invoice will be issued via email by IBBK Fachgruppe Biogas GmbH without charging VAT. Written cancellations are possible **before November 24<sup>th</sup>, 2017** for an administration charge of 90,- EUR. After November 24<sup>th</sup>, 2017 cancellations are billed in full. In case of cancellations even in case of illness we gladly accept a substitute participant. The number of participants is limited, therefore a timely registration is recommended.

**Early bird discount available for registration  
and payment until November 13<sup>th</sup>: 440 €!**

**After that, the regular price for the seminar and tour is 540 €**

#### Included are

- Seminar-CD
- Beverages during the course
- Lunch with beverages
- Coach travel to biogas sites
- Certificate from UCT (CPD certified)

#### Not included are

- Travel to the seminar venue
- Accommodation
- Further meals and beverages

### Registration form (please provide billing address)

3<sup>rd</sup> Agro-industrial Biogas Training Seminar and Study Tour, UCT, 11. - 13. December 2017

Family name ..... First name .....

Company/ Institution .....

Street/No. .... ID-Nr.(necessary for CPD registration at UCT) .....

ZIP-code ..... City ..... Country .....

Tel. .... Fax .....

Email ..... Website .....

Date ..... Signature .....

\* With your signature you agree that the following data (Country, Company, Name, Given name) will be published in the participants list, which will be only distributed to the attendees of the course.

### Deadline for Registration: 24<sup>th</sup> of November 2017

by Fax to:

or E-mail to:

**+49 - (0)7954 – 926132**

**t.gruszkos@biogas-zentrum.de**

**Fachgruppe Biogas GmbH \* Am Feuersee 6 \* 74592 Kirchberg \* Germany**



# 3rd Agro-industrial Biogas Training Seminar and Study Tour



Program (may be subject to change):

Monday, 11 <sup>th</sup> December 2017	
9:00 – 12:30	<p><b>Part 1: Welcome to the seminar (IBBK, IBERT, UCT)</b></p> <ul style="list-style-type: none"> <li>• Introduction of the seminar participants and experts</li> <li>• Expectations from the seminar</li> <li>• Collection of the first questions</li> </ul> <p><b>Part 2: Status quo of the biogas sector development in South Africa as well as the way forward (IBBK)</b></p> <ul style="list-style-type: none"> <li>• Potentials and prospects</li> <li>• Status of waste legislation</li> <li>• Economic framework conditions</li> <li>• Data for waste arising and composition</li> </ul> <p><b>Part 3: General introduction into biogas technology &amp; digester biology (IBBK)</b></p> <ul style="list-style-type: none"> <li>• Basic principles of process technology</li> <li>• Temperature, retention time, organic loading rate</li> <li>• Operating experiences from 8000 agro-industrial biogas plants</li> <li>• Conditions for the generation of biogas,</li> <li>• Operating parameters</li> <li>• Process monitoring and task management</li> <li>• Process disturbances and failures</li> </ul> <p><b>Part 4: Different technologies and components of biogas plants (IBBK)</b></p> <ul style="list-style-type: none"> <li>• Wet and dry fermentation plants</li> <li>• Agricultural and bio-waste digestion biogas plants</li> <li>• Treatment of industrial effluents</li> <li>• Experiences with investment and operation</li> <li>• Developments and adaptations of the technology</li> </ul>
(10:30 – 11:00 Coffee Break)	
12.30 – 13:30	<b>Lunch</b>
	<p><b>Part 5: Introduction of the main components of a biogas plant (IBBK)</b></p> <ul style="list-style-type: none"> <li>• Digester types and installation technology</li> <li>• Process and feed in technology</li> <li>• Developments and adaptations of the technology to suit the local circumstances in South Africa</li> </ul> <p><b>Part 6: Experiences with biogas plant equipment in South Africa (IBERT)</b></p> <ul style="list-style-type: none"> <li>• Pumps, mixers, compressors, pipes</li> <li>• Measurements: temperature, flow, pressure</li> <li>• Digester types and installation technology</li> <li>• Process and feed in technology</li> </ul>
19:00 – 22:00	<p><b>Part 7: Meet and Greet (optional):</b> Group dinner at local restaurant at own expense</p>

Tuesday, 12 <sup>th</sup> December 2017	
9:00 – 12:30	<p><b>Part 1: Overview of different substrates which can be used into a biogas plants and its advantages and disadvantages (IBBK)</b></p> <ul style="list-style-type: none"> <li>• Input substrates: agricultural slurries, industrial and communal organic residues</li> <li>• Gas yields from residue material and industrial wastes</li> <li>• Wastes as a feedstock for biogas plants</li> <li>• Pollutants and contraries in bio-waste</li> </ul> <p><b>Part 2: Basic calculation models of a biogas plant process with different substrates (IBBK)</b></p> <ul style="list-style-type: none"> <li>• Examples of biogas calculations/gas generation</li> <li>• Experiences from a field study</li> <li>• Costs structure of equipment and services</li> <li>• Key parameters for business plan development,</li> <li>• Appropriate technology assessment</li> </ul> <p><b>Part 3: Basic engineering parameters for the operation of a biogas plant with different substrates (IBBK)</b></p> <ul style="list-style-type: none"> <li>• Basic principles of process technology</li> <li>• Temperature, retention time, organic loading rate</li> <li>• Operating experiences from 8000 agro-industrial biogas plants</li> <li>• Conditions for the generation of biogas</li> <li>• Process failures and trouble shooting</li> </ul>
(10:30 – 11:00 Coffee Break)	
12:30 – 13:30	<b>Lunch</b>
13:30 – 17:00	<p><b>Part 4: Start up phase and practical measures for monitoring the digestion process (IBERT)</b></p> <ul style="list-style-type: none"> <li>• Initial phase: Seeding, heating and start of the feeding</li> <li>• Daily monitoring, maintenance and testing parameters during operation</li> <li>• Practical devices for on-site monitoring (FOS/TAC, pH, gas analysis)</li> </ul> <p><b>Part 5: Safety aspects and standards with biogas plants (IBBK, IBERT)</b></p> <ul style="list-style-type: none"> <li>• Definitions: explosive zones, distances, materials</li> <li>• Choosing technical equipment under safety aspects</li> <li>• Technical and designing failures</li> <li>• South African Safety Standards</li> </ul> <p><b>Part 6: Proper usage of digestate as organic fertilizer (IBBK)</b></p> <ul style="list-style-type: none"> <li>• Simple concepts for South African conditions</li> <li>• Management and field application</li> <li>• Digestate processing</li> <li>• Fiber and fertilizer production</li> </ul>
(15:30 – 16:00 Coffee Break)	

Wednesday, 13 <sup>th</sup> December 2017	
8:00	<p><b>Part 1: Study Tour to exemplary biogas plant(s) in the Western Cape</b></p> <ul style="list-style-type: none"> <li>• Talk to operator and analyse his practical operation</li> <li>• Discuss trouble shooting needs</li> </ul>
	<b>Lunch on the way at own expense</b>
to 18:00	<p><b>Part 2: Study Tour to exemplary biogas plant(s) in Western Cape</b></p> <ul style="list-style-type: none"> <li>• Talk to operator and analyse his practical operation</li> <li>• Discuss trouble shooting needs</li> </ul> <p><b>Handout of the certificates – end of the study tour and the seminar</b></p>