

## 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 February 1<sup>st</sup>, 2016** for an administration charge of 90,- EUR. After February 1<sup>st</sup>, 2016 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.

**The complete price for the seminar and tour is 440,- EUR.**

### Included are

- Seminar-CD
- Beverages during the course
- Lunch with beverages
- Entrance fees to biogas sites
- 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)

2<sup>nd</sup> Agro-industrial Biogas Training Seminar and Study Tour , UCT, 23. - 25. February 2016

Family name	First name	
Company/ Institution		
ZIP-code	City	Country
Street/No	ID-Nr.(necessary for CPD registration at UCT)	
Fon	Fax	
E-mail	www	
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: 1<sup>st</sup> of February 2016

by Fax to:

or E-mail to:

+49 - (0)7954 - 926132

[s.volk@biogas-zentrum.de](mailto:s.volk@biogas-zentrum.de)

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



## 2<sup>nd</sup> Agro-industrial Biogas Training Seminar and Study Tour

Western Cape, South Africa  
at the

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

23 - 25 February 2016

The International Biogas and Bioenergy Center of Competence IBBK is delighted to invite you to the second 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 23. - 25. February 2016.

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.

### Seminar instructors

Michael Köttner, CEO at IBBK Fachgruppe Biogas GmbH, Germany

Mark Tiepelt, CEO at BiogasSA, South Africa

Melissa Mackay, Senior Consultant at the Cape EAPrac, South Africa

Horst Unterlechner, Technical Director at ibert, South Africa

### 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



## Programme (may be subject to change)

### Tuesday, 23 February 2016

- 9:00 – 12:30 Part 1: Welcome to the seminar
- Introduction of the seminar participants and experts
  - Expectations from the seminar
  - Collection of the first questions
- Part 2: Status quo of the biogas sector development in South Africa as well as the way forward
- Potentials and prospects
  - Status of waste legislation
  - Economic framework conditions
  - Data for waste arising and composition
- (10:30 – 11:00 Coffee Break)
- Part 3: Development of the biogas technology in Germany and Europe
- Potentials and prospects
  - Status of waste legislation
  - Economic framework conditions
  - Data for waste arising and composition
- Part 4: General introduction into biogas technology and digester biology
- Basic principles of process technology
  - Temperature, retention time, organic loading rate
  - Operating experiences from 8000 agro-industrial biogas plants
  - Conditions for the generation of biogas,
  - Operating parameters
  - Process monitoring and task management
  - Process disturbances and failures
- 12.30 – 13:30 Lunch
- 13:30 – 17:00 Part 5: Examples of different types of biogas plants and their practical experiences
- Wet and dry fermentation plants
  - Bio-waste Digestion
  - Agricultural biogas plants
  - Treatment of industrial effluents
  - Experiences with investment and operation
- (15:00 – 15:30 Coffee Break)
- Part 6: Introduction of the main components of a biogas plant
- Digester types and installation technology
  - Process and feed in technology
  - Developments and adaptations of the technology to suit the local circumstances in South Africa.
- Part 7: Approval conditions for biogas plants under South African conditions (regulatory requirements for AD systems) including:
- Licenses for building
  - Safety plus licenses
  - Emission licenses
  - Overview of the legal requirements
  - Regulatory tool and how to use it
- 19:00 – 22:00 Part 8: Meet and Greet (optional):  
Group dinner at local restaurant at own expense

### Wednesday, 24 February 2016

- 9:00 – 12:30 Part 1: Overview of different substrates which can be used into a biogas plants and its advantages and disadvantages
- Input substrates: agricultural slurries, industrial and communal organic residues
  - Gas yields from residue material and industrial wastes
  - wastes as a feedstock for biogas plants
  - Pollutants and contraries in bio-waste
- Part 2: Basic calculation models of a biogas plant process with different substrates
- Examples of biogas calculations/gas generation
  - Experiences from a field study
  - Costs structure of equipment and services
  - Key parameters for business plan development,
  - Appropriate technology assessment
- (10:30 – 11:00 Coffee Break)
- Part 3: Interactive planning session for wet and dry fermentation technology
- Retention time
  - Organic loading rate
  - Sizes of containers and tanks
  - Nutrient composition
  - Electricity and heat production
  - Efficiency factors of gas utilization
  - Discussion of the results
- 12:30 – 13:30 Lunch
- 13:30 – 17:00 Part 4: Experiences in project and market development under South African conditions
- Market challenges
  - Legal, administrative and technical obstacles
  - Experiences with technology and operation
- (15.30 – 16:00 Coffee Break)
- Part 5: Proper usage of digestate as organic fertilizer in agriculture
- Environmental aspects
  - Application of digestate
  - Digestate processing
  - Treatment costs - profitability

### Thursday, 25 February 2016

- 08:00 Part 6: Study Tour to exemplary biogas plant(s) in the Western Cape
- Talk to operator and analyze his practical operation
  - Discuss trouble shooting needs
- Lunch on the way at own expense
- Part 6: Study Tour to exemplary biogas plant(s) in Western Cape
- Talk to operator and analyze his practical operation
  - Discuss trouble shooting needs
- to  
18:00
- End of Seminar and Study Tour