

5th Agro-industrial Biogas Training Seminar and Study Tour

2nd – 4th of March 2020

Venue: University of Cape Town

Monday, 2 nd March 2020	
9:00 – 12:30	<p>Part 1: Welcome to the seminar</p> <ul style="list-style-type: none"> • Introduction of the seminar participants and experts • Expectations from the seminar • Collection of the first questions
(10:30 – 11:00 Coffee Break)	<p>Part 2: Status quo of the biogas sector development in South Africa as well as the way forward</p> <ul style="list-style-type: none"> • Potentials and prospects • Status of waste legislation • Economic framework conditions • Data for waste arising and composition
	<p>Part 3: General introduction into biogas technology & digester biology</p> <ul style="list-style-type: none"> • 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
	<p>Part 4: Different technologies and components of biogas plants</p> <ul style="list-style-type: none"> • Wet and dry fermentation plants • Agricultural and bio-waste digestion biogas plants • Treatment of industrial effluents • Experiences with investment and operation • Developments and adaptations of the technology
12.30 – 13:30	Lunch
	<p>Part 5: Introduction of the main components of a biogas plant</p> <ul style="list-style-type: none"> • Digester types and installation technology • Process and feed in technology • Developments and adaptations of the technology to suit the local circumstances in South Africa
	<p>Part 6: Experiences with biogas plant equipment in South Africa</p> <ul style="list-style-type: none"> • Pumps, mixers, compressors, pipes • Measurements: temperature, flow, pressure • Digester types and installation technology • Process and feed in technology
19:00 – 22:00	<p>Part 7: Meet and Greet (optional): Group dinner at local restaurant at own expense</p>

Tuesday, 3rd March 2020

<p>9:00 – 12:30</p>	<p>Part 1: Overview of different substrates which can be used into a biogas plants and its advantages and disadvantages</p> <ul style="list-style-type: none"> • 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
<p>(10:30 – 11:00 Coffee Break)</p>	<p>Part 2: Basic calculation models of a biogas plant process with different substrates</p> <ul style="list-style-type: none"> • 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
	<p>Part 3: Basic engineering parameters for the operation of a biogas plant with different substrates</p> <ul style="list-style-type: none"> • 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 • Process failures and trouble shooting
<p>12:30 – 13:30</p>	<p>Lunch</p>
<p>13:30 – 17:00</p>	<p>Part 4: Start up phase and practical measures for monitoring the digestion process</p> <ul style="list-style-type: none"> • Initial phase: Seeding, heating and start of the feeding • Daily monitoring, maintenance and testing parameters during operation • Practical devices for on-site monitoring (FOS/TAC, pH, gas analysis)
<p>(15.30 – 16:00 Coffee Break)</p>	<p>Part 5: Safety aspects and standards with biogas plants</p> <ul style="list-style-type: none"> • Definitions: explosive zones, distances, materials • Choosing technical equipment under safety aspects • Technical and designing failures • South African Safety Standards
	<p>Part 6: Proper usage of digestate as organic fertilizer</p> <ul style="list-style-type: none"> • Simple concepts for South African conditions • Management and field application • Digestate processing • Fiber and fertilizer production



Wednesday, 4th March 2020	
8:00	Part 1: Study Tour to exemplary biogas plant(s) in the Western Cape <ul style="list-style-type: none">• Talk to operator and analyse his practical operation• Discuss trouble shooting needs
12:30 – 13:30	Lunch
To 18:00	Part 2: Study Tour to exemplary biogas plant(s) in Western Cape <ul style="list-style-type: none">• Talk to operator and analyse his practical operation• Discuss trouble shooting needs Handout of the certificates – end of the study tour and the seminar

Program may be subject to change