2nd Agro-industrial Biogas Training Seminar

Day 1

Monday, May 15th, 2017

9:00 – 12:30 am	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-East Asia 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 am 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 • Definitions • Biogas composition • Technology overview and its main applications • Wet and dry fermentation plants
12.30 – 1.30	Lunch
1:30 – 5.00 pm	Part 5: Introduction into process parameters 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
3:00 – 3.30 pm Coffee Break	▪ Process disturbances and failures
	Part 6: Operating experiences with agro-industrial and municipal biogas plants ▪ Wet and dry fermentation plants ▪ Bio-waste digestion ▪ Agricultural biogas plants ▪ Treatment of industrial effluents ▪ Experiences with investment and operation Part 7: Choosing the best components for a biogas plant for smooth operation ▪ Digester types and installation technology ▪ Process and feed in technology ▪ Developments and adaptations of the technology to suit the local circumstances in South-East Asia.

Day 2

Tuesday, May 16th, 2017

9:00 – 12:30 am	Part 1: Most suitable substrates which can be used in biogas plants and their advantages and disadvantages ▪ Input substrates: POME, agricultural slurries, industrial and communal organic residues ▪ Gas yields from POME, residue material and industrial wastes ▪ Solid wastes (empty fruit bunches) as a feedstock for biogas plants ▪ Pollutants and contraries in solid bio-waste
10.30 – 11.00 am Coffee Break	Part 2: Practical calculations for the improvement of a biogas process with different substrates • Examples of biogas calculations/gas generation • Experiences from a field study in Indonesia • Costs structure of equipment and services • Key parameters for business plan development • Appropriate technology assessment
	Part 3: Interactive operators 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 – 1.30	Lunch
1:30 – 5:00 pm	Part 4: Operating experiences with biogas plants under South-East Asian conditions • Market challenges • Legal, administrative and technical obstacles • Experiences with technology and operation
3.30 – 4 pm Coffee Break	• Operation of POME fed biogas plants
	Part 5: Biogas upgrading technologies for the use as vehicle fuel and grid injection • Basic principles of gas upgrading • Technology options • Biomethane pathways of utilisation Part 6: Proper usage of digestate as organic fertilizer in agriculture • Environmental aspects • Application of digestate • Digestate processing • Treatment costs-profitability • Experiences with digested POME sludge as fertilizer