



Stephen Wiedemann to Visit Anaerobic Digestion Facilities in Europe

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Stephen Wiedemann of FSA Consulting undertook a study tour between 17-19 November 2008 looking at anaerobic digestion plants in Denmark and Germany using pig (and multi-species) manure and effluent. This incorporated visits to leading researchers in this field and followed on from his attendance at the 6th International Conference on Life Cycle Assessment in the Agri-Food Sector in Switzerland.

The objective of the visit was to investigate anaerobic digestion and other manure and effluent processing options already well developed in Europe, paying particular attention to nutrient recovery options from digested manure/slurry and the feasibility of establishing these processes on a commercial scale in Australia.

The study tour included a visit to Linnau Biogas, a commercial plant in Lindewitt, Germany. The plant is typical of many throughout Germany built in response to government incentives for green energy. The visit gave an opportunity to view the biogas operating system and discuss economics of biogas production in Germany.

A meeting with Teodorita Al Seadi at the University of Southern Denmark's Centre for Bioenergy included discussion on the economics of biogas production in Europe and the organisational structure adopted for operation of biogas facilities in Denmark.

The University of Aarhus operates a full scale biogas facility for research into all aspects of biogas production from animal slurries. This facility was trialling ammonia stripping, a mature technology which can be retrofitted to biogas reactors. The facility also operated a solids separation process, an area of growing commercial interest.

A visit to the Thorso commercial biogas plant, which has been operating continuously since 1994, provided an opportunity to see one of 20 centralised facilities in Denmark. The Thorso plant is owned by a farmer co-operative and digests mainly animal slurry from local piggeries and dairies.

The final visit was to Ruckert Naturgas in Lauf, Germany, a small engineering firm specialising in the planning, design and construction of biogas plants for specific purposes. A figure of approximately AUD\$4m was quoted for design and construction of a 500 kW biogas plant.

Considering the advancement of biogas production and nutrient recovery research and technology in Europe, it's likely that all necessary knowledge and equipment for the development of such an industry in Australia can be readily accessed from international sources.