

Presentation 2: Karen Laughlin, EMC

Q: Sukru Solmaz – we have encountered problems when cooling gases in a waste heat boiler; the particles tend to become sticky. How was the gas cooled in the gasification processes described?

A: Matti Nieminen, VTT Processes – VTT carried out gas filtration at 400°C: this avoided the problem. Tar levels in the gases produced by the VTT process were lower than expected, hence there were no problems encountered. Gas from the VTT system was fired directly in a boiler; however, if it were to be used in, for instance, an engine, a wet scrubbing stage would probably be required.

Q: Mike Welch, Demag Delaval Industrial Turbomachinery – what was the situation with CO emissions. The most difficult emissions to be met will be CO levels from a gas turbine or engine.

A: Matti Nieminen – where the gas is combusted in a boiler, control of CO levels is easier.

Mike Welch – CO levels are more difficult to control with engine- or gas turbine-based systems. There are legislative requirements that must be met.

Sukru Solzman – it must be remembered that CO is easily combusted.

Abdullah Malik, Waste to Energy Ltd – when CO is monitored in fossil fuel-fired systems, it is really monitoring the efficiency of the system.

Q: Francis Mosnier, Suez Environment – what were the carbon-in-ash levels found with the gasification systems examined?

A: It depended on the particular process and type of gasifier used. Levels were lower than with coal gasification residues; levels of <5% were obtained under some conditions.

Q: Francis Mosnier – how variable were the properties of the sewage sludges used?

A: Karen Laughlin – we used thermally dried sewage sludge and the preparation tended to homogenise it. Overall, the properties did not vary greatly.

Sukru Solmaz – the main change tends to be in the level of ash present.

Q: Francis Mosnier – what is the minimum level of moisture required to obtain satisfactory sewage sludge gasification?

A: Matti Nieminen – it depends mainly on how the gas is to be used. If it is to be co-combusted in a coal-fired plant, a lower quality of gas can be tolerated.

Q: Mike Welch – why were only air-blown gasification processes considered? Why was pyrolysis not included?

A: It was considered that pyrolysis was outside the scope of the present 5FW project.