VALORGAS

Valorisation of food waste to biogas

Mass and energy balances

Valorsul, Lisbon, Portugal

Biocycle, Ludlow, UK

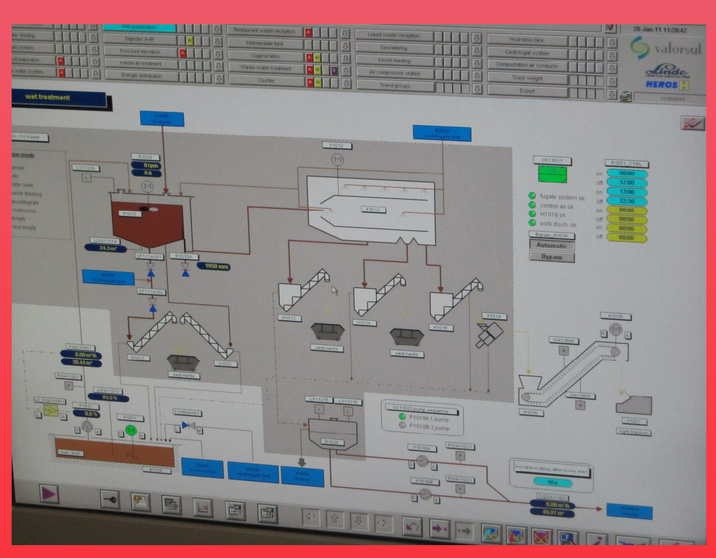
Holsworthy, Devon, UK

Full-scale plant used in mass and energy balance studies

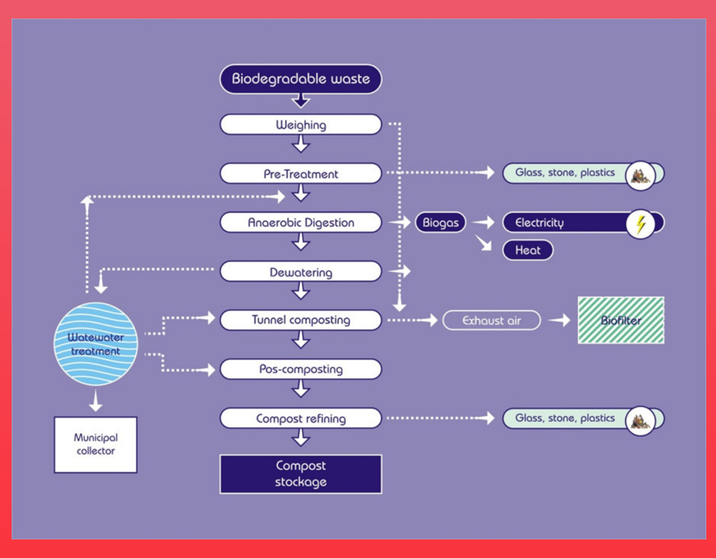
For a renewable energy facility to be effective it must show a positive net energy output. The highest ratio of energy production to energy inputs in anaerobic digestion plant occurs where the degree of pre-processing of the input materials and post-processing of products can be minimised. Other factors that need to be taken into account include the use of raw materials such as water, chemicals and mac-ro– and micro-nutrients.

The objectives of the research are

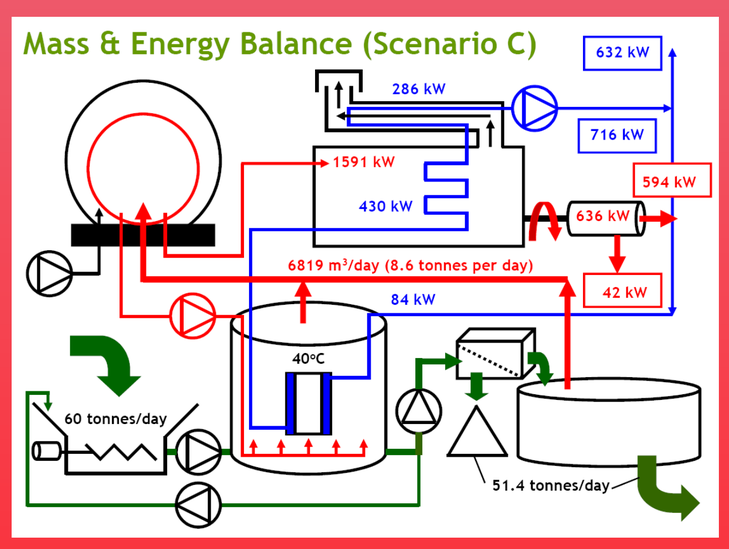
- to quantify the energy usage in AD plant processing source segregated food waste from households and also from commercial premises such as canteens and restaurants
- to determine the parasitic energy requirements (heat and power) for plant operation
- to establish energy ratios (output/input) with different feedstock types and process configurations
- to determine a mass balance of materials around the plant that gives confidence in the results



Data capture



Modelling of plant



Presentation of results

Project coordinators: University of Southampton, Faculty of Engineering & Environment **www.valorgas.soton.ac.uk**