

Project: Life Cycle Modelling and Sensitivity Analysis of Biogas Production Systems: A Review and Inventory-Based Assessment

Vacant: 6-9 months

Summary: This project focuses on the environmental modelling of biogas production systems using Life Cycle Assessment (LCA). The work begins with a comprehensive review of the current state of biogas modelling, including commonly used methodologies, system boundaries, and assumptions reported in the literature. Based on this review, a life cycle inventory (LCI) will be compiled by collecting and evaluating relevant input and output data for the selected biogas system. The student will become familiar with LCA modelling methodologies and implement the model using appropriate software and databases. Finally, a sensitivity analysis will be conducted to evaluate the influence of key parameters and assumptions on the environmental performance of the biogas system, identifying the most significant sources of uncertainty and opportunities for improving model robustness.

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