Life cycle assessments

Performing a life cycle assessment is very important for determination of the environmental impact of both existing and future projects that affects the society. However, in order to have reliable results it is imperative to have accurate data to base the calculations on. In particular for projects related to biogas production, which are characterised by many uncertain variables (e.g. large variations of feedstock both in quality and quantity, transportation, availability and storage conditions of feedstock, weather conditions, distribution of end product), it is important to get specific and updated data for each individual case. By performing methane potential tests with the AMPTS II it is simple to get direct and important information of how much and fast energy can be recovered from the raw biomass material, which are key figures that will have a large influence on the results of a life cycle assessment.

Example 1
Compare different process configurations

A life cycle assessment can be used to determine which type of process configuration is the most sustainable option for a project. In these cases it is very important to have accurate data based on how the different process configurations are performing. By using the AMPTS II to evaluate this, by simulating the biomass degradation under certain process configurations, it is possible to generate this important data with minimal effort (Patterson et al., 2013).

Example 2
Determine the energy potential related to the input conditions

In order to find the best possible feedstock for an industrial process it is important to relate their methane producing potential with the conditions they are obtained from. Parameters such as transportation, storage possibilities, growth yield, harvest time and pre-treatment processes are examples of factors that need to be related to the methane potential in order to find the most sustainable option.

Example 3
Use online database to get highly specific data

The use of AMPTS II includes access to an online database with previously performed tests from users around the world. By using this data it will be possible to get a better understanding of the biogas or biomethane production that can be expected from the different biomass sources, depending on parameters such as material type, season variation and geographic locations. This will provide the study with much more realistic data compared to estimated values or results from individual tests in one lab.
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References
