Conference of European Biogas Association, Alkmaar, The Netherlands, 2014

Modeling biogas chains

FLEXIGAS

F. Pierie, J. Broekhuijsen, W. Liu, R.M.J. Benders, W.J.G. van Gemert, H.C. Moll

Within the Flexigas project a model has been constructed which can analyze the efficiency, carbon footprint and environmental impact of anaerobic biogas production chains.

PhD. candidate:
Frank Pierie MSc. B Eng.

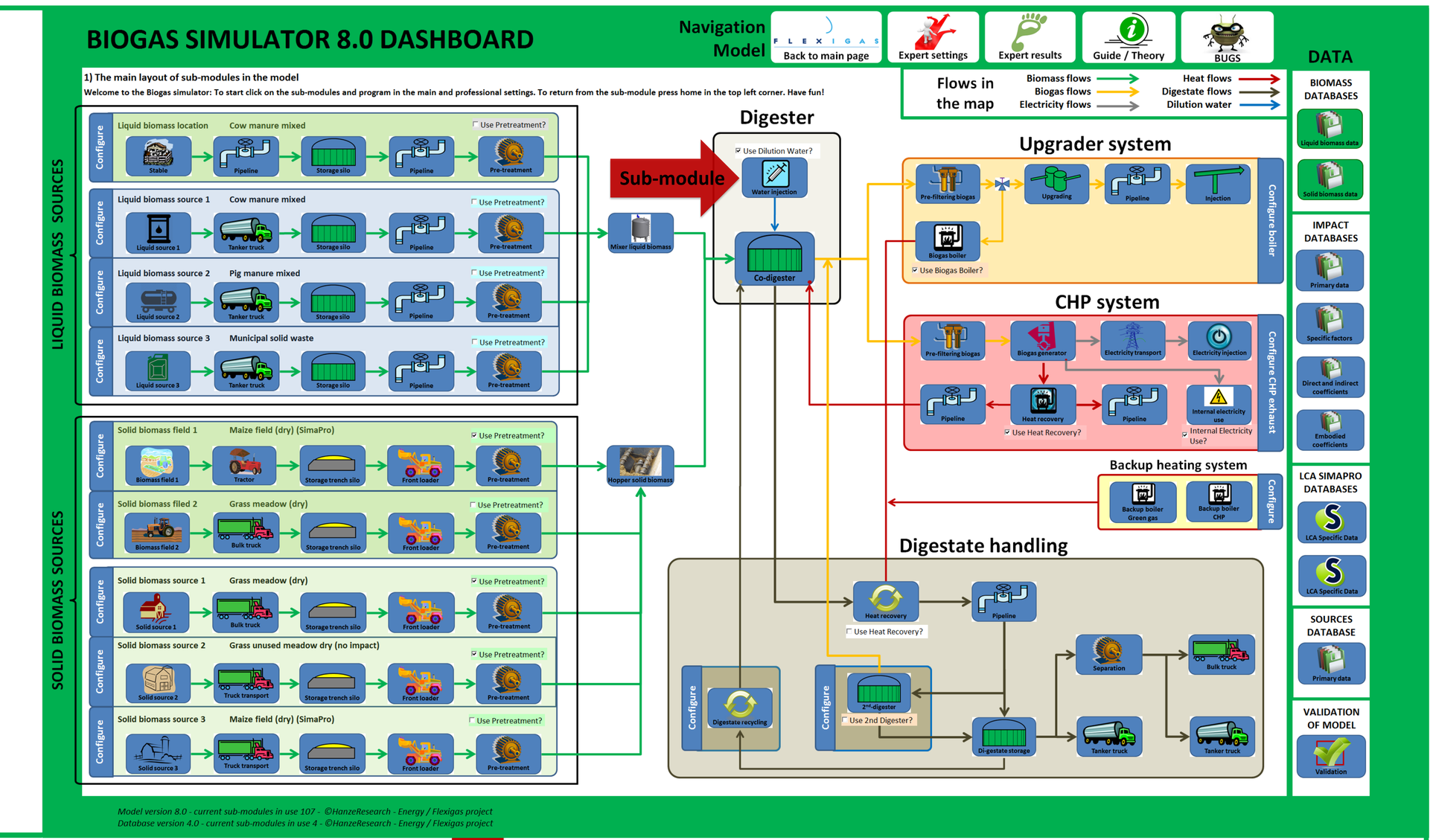
Research duration:
- ➢ Start, July 2011
- ✓ End, December 2015

HanzeResearch
University of Applied Sciences
Energy
university of groningen

Interested? Come visit our stand at the conference.

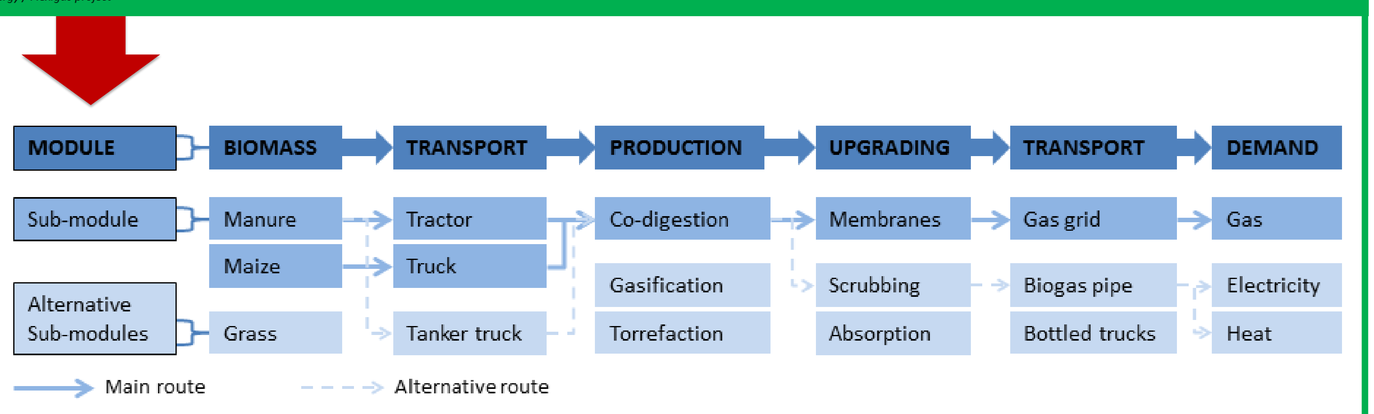
Any remarks or feedback? Please let me know!

E-mail: f.pierie@pl.hanze.nl



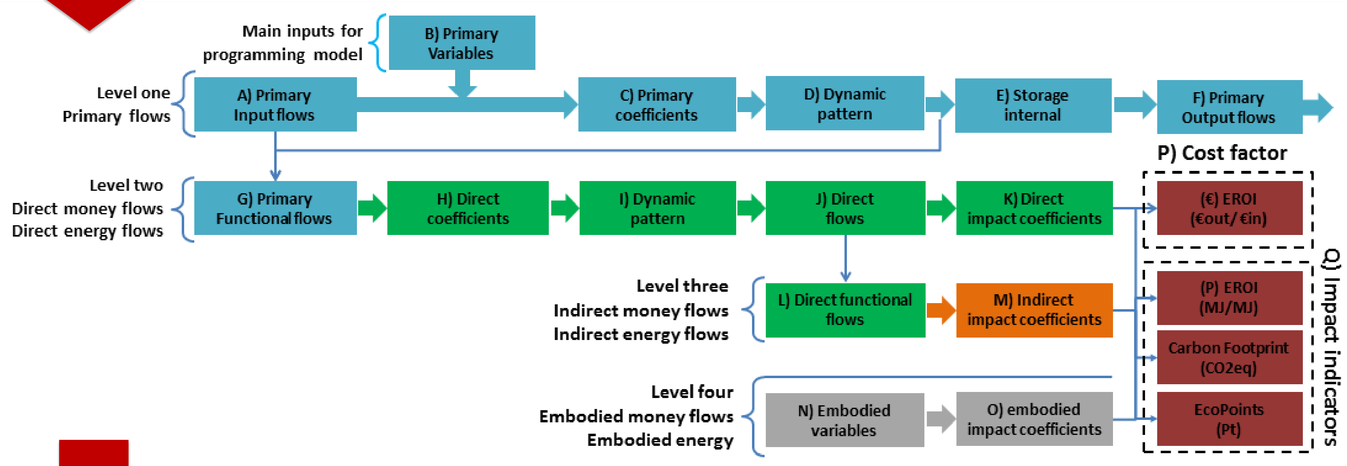
Modular approach

The biogas production pathway in the model is built up of a succession of sub-modules in logical order forming a chain. The modular approach can be used to design the optimum production pathway to suit particular cases, by changing, adding or removing individual sub-modules during the modeling process.



Methodology

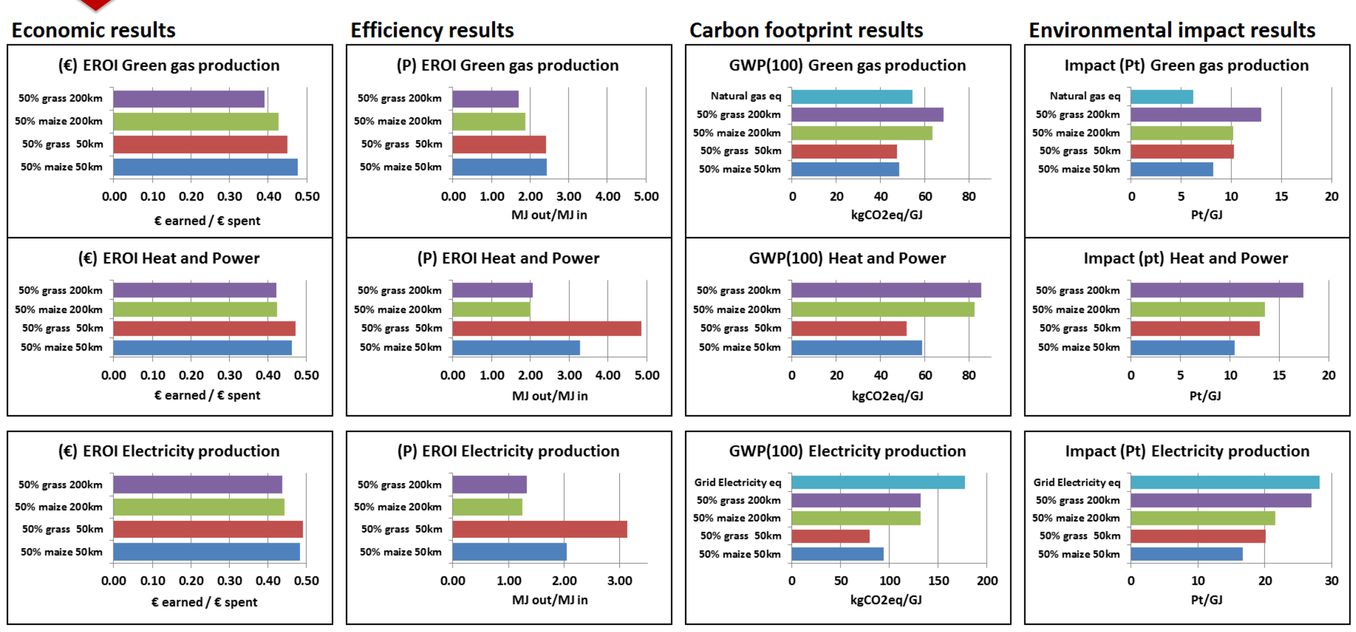
Within each sub-module, one main physical process of the biogas production pathway is described. The model is based on the industrial metabolism concept described by the Material & Energy Flow Analysis (MEFA) method and extended by attributed Life Cycle Analysis (aLCA).



First results from the model

An analysis was performed on four different scenarios, namely:

1) 50% Energy maize transported over 50 km and 50% manure over 5km
2) 50% Meadow grass transported over 50 km and 50% manure over 5km
3) 50% Energy maize transported over 200 km and 50% manure over 5km
4) 50% Meadow grass transported over 200 km and 50% manure over 5km



Need more information on the results and the build-up of the scenarios? Come visit our stand TNO / Flexigas

This project is part-financed by the municipality of Groningen, province of Groningen, the European Union, European Regional Development Fund, the Ministry of Economic Affairs "Pieken in de Delta" and the "Samenwerkingsverband Noord-Nederland", and is supported by Energy Valley.

RENQI energy valley
Ministerie van Economische Zaken, Landbouw en Innovatie
provincie groningen
gemeente Groningen
SNN